BuruEnergy

Well Drilling Environment Plan
Summary Document

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HSE

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1 Introduction

Buru Energy (Company) has developed the *Well Drilling Environment Plan* (HSE-PLN-048) (Environment Plan) for the management of environmental aspects associated with the following Activities:

- workover and/or sidetrack and testing of the Rafael 1 exploration well;
- drilling and testing of the Rafael 2 and Mars 1 exploration wells;
- care and maintenance, decommissioning and rehabilitation operations of all wells covered in the EP.

This Summary Document summarises the operations and mitigation and management measures in the Environment Plan.

1.1 Contact Details

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2 Overview of Activity

Location and operational details specific to the Activities are provided in Table 1. The location of the Activity areas is shown in Figure 1. The coordinate system used is GDA 94, Zone 51.

Table 1 Characteristics of the wells

Well	Locality	Surface Location	Permit
Rafael 1	85 km S Derby	566,080 E; 8,001,600 N	EP 428
Rafael 2	85 km S Derby	Located on same well pad as Rafael 1: 566,080 E; 8,001,600 N	EP 428
Rafael Shallow 1	90 km S Derby	558,682 E; 8,003,071 N	EP 428
Mars 1	95 km East of Broome	515,178 E; 8,017,918 N*	L 20

*Indicative location within surveyed area.

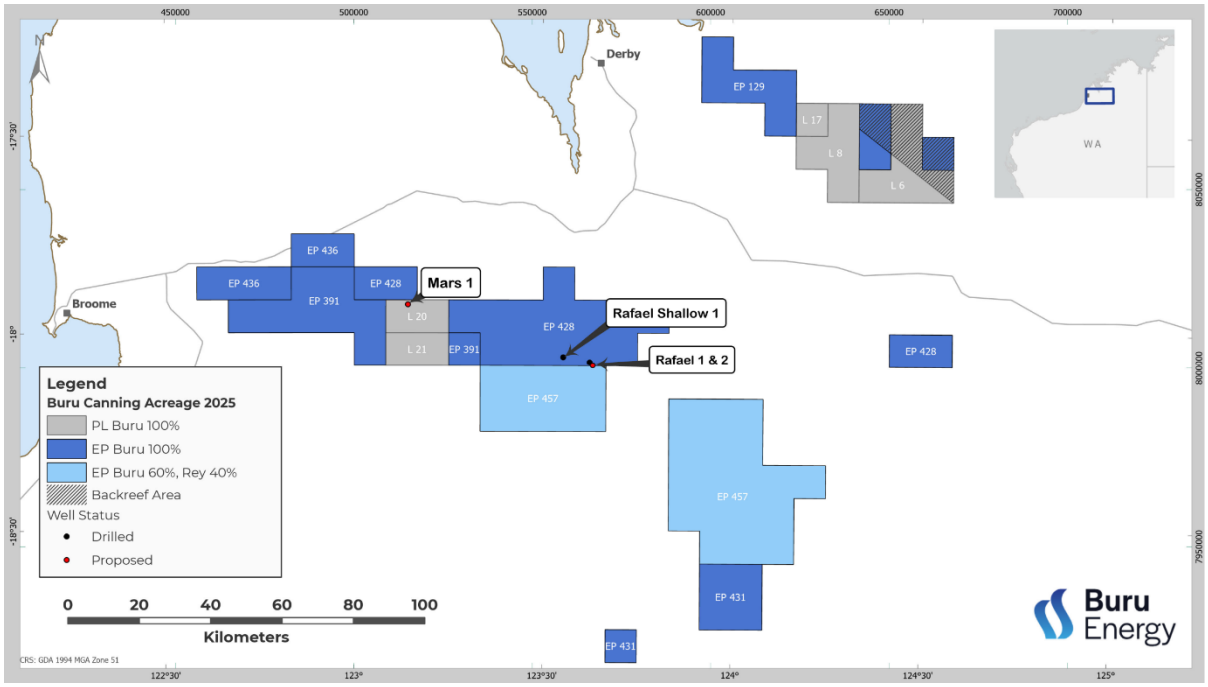


Figure 1 Location of the Activity area

2.1 Timing

The drilling and flow testing of Rafael 2 is anticipated to commence in the June Quarter 2026. The workover and/or sidetrack of the existing Rafael 1 well is anticipated to commence following the Rafael 2 activities. The timing of drilling the conventional Mars 1 oil prospect will be subject to the successful farmout of the well during 2H 2025.

2.2 Civil Construction

The new Mars 1 well site and access track will be constructed as part of the Activity. Note that the Rafael 2 well will be located on the existing Rafael 1 well site, and access via the existing track. The following infrastructure will be established on well sites, as required:

- water storage facilities (turkeys nest and/or tanks);
- rig hardstand area;
- water bore;
- cuttings sump; and
- well cellar and conductor.

Subsoil removed from the cuttings sumps and turkeys nest (if present) will be utilised for levelling and gently sloping the well site away from well centre to provide drainage during rainfall events. The well sites and access tracks will be stabilised as required (e.g. using gravel, cement blend).

2.3 Well Drilling and Testing

The drilling rig will operate 24 hours a day, seven days a week with two crew shifts totalling approximately 30 personnel for the drilling operations. A Company Representative will supervise the Activity.

Drilling a well generally involves the following key stages:

- drilling the well as a number of hole sections/intervals with decreasing diameter;
- installing steel well casings in drilled hole sections;
- filling the annulus outside the well casings with cement as required for well integrity; and
- installing a tubing/completion with Christmas Tree on surface.

Testing may be conducted to evaluate prospective zones if positive results of hydrocarbons are determined during initial testing, or to test injectivity of the well. This will be undertaken following completion of drilling operations and demobilisation of the drilling rig.

2.3.1 Mud and Cuttings

All chemicals and other substances to be used down hole during the Activity have been fully disclosed in accordance with Regulation 15(9) of the Petroleum and Geothermal Energy Resources (Environment) Regulations 2012 and Chemical Disclosure Guideline (DMP 2013). Full chemical disclosure and SDS are provided in Appendix A.

During drilling, returned drilling mud and cuttings will be treated to separate solids and liquids. A lined cuttings sump will be constructed within the well site for storage and settling of drilling mud and cuttings.

2.4 Well Sidetrack

Well sidetracks can be completed using a rig or coiled tubing unit. A well sidetrack generally involves the following key stages:

- rig up pressure control equipment and BOP;
- kill well;
- retrieve current completion/casing;
- set new cement plug in existing borehole;
- sidetrack well and drill new borehole;
- installing steel well casings in drilled hole sections;
- filling the annulus outside the well casings with cement as required for well integrity; and
- installing tubing/completion with Christmas Tree on surface.

2.5 Well Workover

Well workovers can be completed using a rig, coiled tubing unit, hydraulic workover unit or jacking platform. A workover generally involves the following key stages:

- rig up pressure control equipment and BOP;
- kill well;
- retrieve current completion;
- perforate additional zones; and
- deploy new completion.

2.6 Wireline Operations

Wireline operations generally involves the following key stages:

- rig up pressure control equipment; and

- proceed with downhole operations.

2.7 Water Source

Water for the Activities will be sourced from existing water bore/s or new water bore/s. Construction of each bore and taking of water will be licensed in accordance with the *Rights in Water and Irrigation Act 1914* administered by the Department of Water and Environmental Regulation.

2.8 Waste Management

Waste likely to be generated during the Activities can be classified as putrescible waste, general waste, industrial waste and septic waste. Waste will be managed and monitored in accordance with the Company *Waste Management Procedure* (HSE-PRO-005). Sewage will likely be treated through an Aerated Wastewater Treatment System on site.

2.9 Demobilisation, Care and Maintenance and Rehabilitation

Depending on the results of the testing, at completion of drilling the wells, the wells will either be suspended, completed and suspended, or plugged and abandoned. In any case the well sites will be demobilised, decommissioned and rehabilitated in accordance with the Environment Plan.

During care and maintenance, routine inspections and testing is undertaken. As a result of these routine inspections, the Company may implement servicing or maintenance of infrastructure.

Following removal of all infrastructure, including the disposal of waste to a licensed waste disposal facility, the Activity areas will be rehabilitated in accordance with the Company *Rehabilitation Management Procedure* (HSE-PRO-035) and the Environment Plan.

3 Environmental Impacts and Management Measures

The Activities will be undertaken within petroleum Exploration Permit EP 428 and Production Licence L 20 (Figure 1). A summary of the existing environmental characteristics surrounding the Activity areas, potential impacts that could result from the Activities and the risk of these potential impacts occurring is provided in Table 2. Included in this table are also the management and mitigation measures that form part of the implementation strategy to minimise environmental risks.

Table 2 Summary of the existing environment, potential impacts and management approach with the Activities

Environmental Characteristic	Description	Potential Impacts	Key Management Measures	Risk	Implementation Strategy
Surface and groundwater	The Fitzroy River is located ~18 km and the Logue River 14 km from the nearest well site. Minor drainage lines are present in the wider surroundings, however there are no permanent waterbodies and the drainage lines are only subject to inundation during the wet season. Depth to groundwater is around 42-45 m at the Rafael Activity area and around 38-40 m at the Mars 1 Activity area.	Contamination of surface and/or ground water. Local groundwater drawdown caused by extraction above licensed allocation. Disturbance of groundwater dependant ecosystems.	• Dangerous and hazardous goods will be stored within bunded areas in accordance with regulatory requirements and relevant SDS. • All chemicals required for use down-hole will be disclosed to DMPE in a Chemical Disclosure prior to use, and SDS provided. • Diesel stored in double skinned tanks or bunded areas. • Chemicals and bulk dry products will be stored in dedicated areas, with cover from rain as required if operations are undertaken during the wet season. • Cuttings and drilling fluid stored and handled in accordance with the *Cuttings, Soil and Fluid Management Procedure* (HSE-PRO-007) including containment within tanks or lined areas.	Given the mitigation and management measures that will be implemented surface and ground water contamination is considered unlikely.	• Inspection of the Activity areas. • OCR (Drilling Supervisor) to ensure all cuttings stored within cuttings facilities. • Baseline and post operations groundwater quality and depth sampling. • Inspection of rainwater in bunds for contamination prior to discharge. • Inspection of the Activity areas following demobilisation for waste.
Landforms and soil	Landforms around the general Activity areas are described as sandplains, with deep red sands and pindan vegetation. Landscape elements within the Rafael Activity area consist of sand sheets, sandy rises and clay plains / loams. Landscape elements within the Mars 1 Activity area consist of dunes and floodplains.	Contamination of soil. Severe soil erosion and sedimentation of surrounding landforms.	• Cuttings and remaining drilling fluids will be tested at completion of drilling to inform disposal. • Refuelling operations manned and undertaken in a bunded area or over a drip tray in accordance with the *Refuelling Procedure* (HSE-PRO-011). • Spill kits available on site. • Liner installed under specific infrastructure or equipment during drilling/testing operations. • Any spills responded to in accordance with the *Canning Basin Spill Response Plan* (HSE-ER-015). • Groundwater and soil monitoring. • Bore water extracted in accordance with DWER groundwater licences. • Groundwater extraction volumes for the Activity recorded and reported to DWER. • Vehicles and machinery limited to the Activity areas, and travel in accordance with the Company T*ravel Management Procedure* (HSE-PRO-002) or contractor equivalent procedure. • Well Management Plan in place and approved for each well. • Well Control with blowout preventer (BOP). • Cement, polymer, gravel, etc. will only be used in parts of the well sites, camp sites, laydown areas and access tracks that require additional compaction and stabilisation. • In the event of heavy rainfall during construction, earthmoving operations will cease. An assessment will be undertaken prior to recommencing operations. • The Activity areas will be constructed to minimise disturbance of soil and landforms. • Routine inspection of Activity areas for erosion and sedimentation will be undertaken. • Waste segregated and stored in bins to prevent litter. • If a camp is present, sewage and grey water treated through an aerated treatment system and discharged to a designated vegetated area. • All waste removed from site at the completion of the Activity.	Through the implementation of management measures, it is unlikely that the Activity will have a significant impact on landforms.	
Vegetation and flora	The dominant vegetation type described during the on-ground surveys were broadly consistent with vegetation units previously described by Beard (1979) as Vegetation Associations Dampierland_64 (grasslands), 699 (pindan) and 7001 (shrublands, pindan). These vegetation types are considered to be widespread throughout the region and not considered to be representative of any listed Threatened Ecological Community or Priority Ecological Community, and none are expected to occur.	Introduction / spread of weed species, including Declared Pests and WoNS. Unintentional clearing of native vegetation outside of Activity area. Disturbance / loss of conservation significant flora species. Inadequate rehabilitation of Activity area.	• Vehicle and personnel access will be limited to Activity areas. • Earthmoving machinery and equipment will be inspected and cleaned prior to arrival at the Activity areas. • Clearing restricted to areas described in this Environment Plan by demarcating the clearing areas by a surveyor prior to construction activities. • Vegetation, topsoil and any subsoil removed during clearing will be separately stockpiled. • Sourced gravel will be weed free. • Inspections verify for presence of weeds attributable to the Activity. • Firefighting equipment available on site. • For each well site, a Civils Work Program will be prepared for civil construction operations. • All specific machinery and equipment removed from site at the completion of work programs.	Through the implementation of management measures, it is unlikely that the Activity will have a significant impact on vegetation and flora.	• OCR to ensure earthmoving machinery and equipment are inspected and cleaned prior to arrival. • Inspection for weeds following demobilisation and rehabilitation. • OCR to ensure that clearing is limited to the Activity areas.

	No Threatened or Priority flora species were identified in the Activity areas. The Activity areas are not within any areas of conservation (e.g. ESAs).	Loss of native flora and habitat due to bushfire from Activities.	• Following well plug and abandonment, rehabilitation will be implemented. Environmental monitoring of rehabilitation will then commence.		
Fauna	The only conservation significant fauna species identified in the vicinity of the Activity areas are highly mobile bird species, and potentially Spectacled hare-wallabies identified by scats recorded during a historical survey. Other potential fauna species that may occur in the region include the Greater Bilby, of which evidence such as burrows have been recorded in the wider surroundings of the Rafael Activity area. These species are not considered to be specifically reliant on habitat contained within the Activity areas, and equivalent habitat exists more widely in the surrounding region.	Death or injury of conservation significant fauna. Death or injury of other fauna including cattle. Loss of fauna due to bushfire from Activities. Attraction or injury of fauna from waste discharge.	• Construction operations will be limited to daylight hours. • Vehicle and personnel access will be limited to Activity areas. • Clearing restricted to areas described in this Environment Plan by demarcating the clearing areas by a surveyor prior to construction activities. • Traditional Owner monitors on site during clearing operations. • Implementation of *Bilby Management Plan for Petroleum Activities* (HSE-PLN-021) if burrows are identified. • Firefighting equipment available on site. • Fence surrounding open lined excavations will be left in place to prevent macro-fauna access. • Egress paths installed in open lined excavations. • Cellars will be fenced and covered with grating or similar to prevent fauna ingress. • Travel in accordance with the *Travel Management Procedure* (HSE-PRO-002) or contractor equivalent procedure, including speed limits as set out by the procedure. • Lighting will be kept to a minimum required for safe operations. • Lighting at the wellsite and camp will face inwards to minimise light spill. • Consultation with relevant landholders regarding livestock management and mustering. • Putrescible waste stored in covered skips/bins to prevent fauna access.	Through the implementation of management measures, it is unlikely that the Activity will have a significant impact on conservation significant fauna species.	• Following construction, a survey of each well site will be undertaken to confirm size of cleared area.
Cultural heritage and local community	The townships of Broome and Derby are the largest population centres near the Activities. The nearest Aboriginal Communities are located over 24 km from the Activity areas. The Activity areas are located within sparsely populated regions with limited settlement, transport or communications infrastructure. The Activity areas are located within the Nyikina Mangala and Yawuru Native Title areas and on the Myroodah and Roebuck Plains pastoral stations. The nearest known Aboriginal heritage site is located approximately 5 km away from the Activity areas. The nearest pastoral homestead is located ~16 km north-west of Rafael Shallow 1.	Damage to culturally significant site / object. Light spill impacting receptors. Dust generation impacting receptors. Noise generation impacting receptors. Reduction in local air quality resulting in disturbance to receptors.	• Ongoing consultation with local landholders and relevant stakeholders. • The Company will undertake a heritage survey with Traditional Owners prior to commencing the Activities. Operations will not commence until heritage clearance is obtained. • Any conditions listed in heritage reports are abided by. • Representatives of Traditional Owners will conduct cultural heritage monitoring of clearing operations. • Operations stopped if a potential heritage artefact is discovered during clearing operations, and Traditional Owners contacted. • Personnel and vehicle access restricted to Activity areas. • Vehicles will comply with the *Travel Management Procedure* (HSE-PRO-002) or contractor equivalent procedure, including speed limits as set out by the procedure. • Vehicles, equipment and machinery are well maintained to industry standards to minimise emissions. • Equipment and machinery muffled to reduce noise emissions. • Construction operations will be limited to daylight hours. • Lighting will be kept to a minimum required for safe operations. • Lighting at the well site and camp will face inwards to minimise light spill. • Dust suppression measures implemented when required. • Company emissions reported under relevant legislation. • Flaring undertaken during drilling and well testing if required (e.g. if significant volumes of gas are encountered).	Given the implementation of the management measures, impacts on cultural heritage and the community are unlikely.	• OCR to ensure vehicles and personnel are limited to access tracks, camp sites and well sites. • Monitoring of civil works undertaken by Traditional Owner representatives.

3.1 Communication and Consultation

The Company has engaged in communication and consultation with relevant stakeholders as summarised in the Environment Plan. As the Activity areas are located within a sparsely populated region with limited settlement, transport or communications infrastructure, relevant stakeholders are limited to government departments, Traditional Owners and pastoralists. The stakeholders consulted with to date include:

- Nyikina Mangala Traditional Owners;
- Yawuru Traditional Owners;
- Yakka Munga Station;
- Myroodah (Luluigui) Station;
- Roebuck Plains Station;
- Department of Fire and Emergency Services;
- Department of Water and Environmental Regulation
- Department of Climate Change, Energy, the Environment and Water;
- Department of Mines, Petroleum and Exploration;
- Department of Planning, Lands and Heritage;
- Shire of Derby-West Kimberley;
- Shire of Broome; and
- Broome and Derby Police.

These stakeholders have been consulted via phone, written notices and face-to-face meetings.

No issues have been raised to date in relation to the Activity through the consultation process. The Company will continue to communicate with stakeholders and consult during all phases of the Activities, on a formal and informal basis, and by email, letter, face-to-face and telephone.

Appendix A Chemical Disclosure and SDSs

A. System Details:

Operator:	Buru Energy LTD
Project / Well:	Drilling and Workover Campaign
System:	Cement and Spacer
Total Volume of System (m^3):	Approx. 625.933 m^3 (3,937 bbl)

B. Product List

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
Customer Supplied Mix Water	Customer	To Mix Fluids	52.1%	No Hazard	No
Cement- Class G + 35% SSA-1	Halliburton	Cement	20.7%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤65%): LD50 Oral: >2000 mg/kg (Rat), LD50 Dermal: >2000 mg/kg, LC50 Inhalation: >1.0 mg/L (4h) (Rat) After hardening with water or moister, cement presents no ecotoxicity risks. (Source: IUCLID 2000) Static Aquatic Toxicity - Freshwater and Marine Algae:- 72 hour EC50: >1,000 mg/L Static Aquatic Toxicity -Freshwater and Marine Invertebrates:- 48 hour LC50: >1,000 mg/L Static Aquatic Toxicity- Freshwater and Marine Fish:- 96 hour LC50: >1,500 mg/L Partition Coefficient, n-Octanol/Water: Not Applicable for inorganics Oxygen Demand, Chemical Oxygen Demand: Not Applicable for inorganics Biodegradability, Seawater – Indigenous microbes: Not Applicable for inorganics CONSTITUENT 2 (≤35%): LD50 Oral: >15000 mg/kg (human) Freshwater Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance); Freshwater Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable.	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Biodegradation: Substance is inorganic - biodegradation is not applicable. Carcinogenicity: Classified as a human carcinogen (IARC Group 1)	
Cement - Class G	Halliburton	Cement	19.5%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤100%): LD50 Oral: >2000 mg/kg (Rat), LD50 Dermal: >2000 mg/kg, LC50 Inhalation: >1.0 mg/L (4h) (Rat) After hardening with water or moister, cement presents no ecotoxicity risks. (Source: IUCLID 2000) Static Aquatic Toxicity - Freshwater and Marine Algae:- 72 hour EC50: >1,000 mg/L Static Aquatic Toxicity -Freshwater and Marine Invertebrates:- 48 hour LC50: >1,000 mg/L Static Aquatic Toxicity- Freshwater and Marine Fish:- 96 hour LC50: >1,500 mg/L Partition Coefficient, n-Octanol/Water: Not Applicable for inorganics Oxygen Demand, Chemical Oxygen Demand: Not Applicable for inorganics Biodegradability, Seawater – Indigenous microbes: Not Applicable for inorganics CONSTITUENT 2 (≤10%): LD50 Oral: >15000 mg/kg (human) Freshwater Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance); Freshwater Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. Carcinogenicity: Classified as a human carcinogen (IARC Group 1)	Yes
Barite	Halliburton	Weighting Agent	0.977%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤100%): Oral LD50: >5000 mg/kg (Rat), Oral LD50: >3000 mg/kg (Mouse), Inhalation LC50: >1.1 mg/L (Rat, Aerosal, 4h) (similar substance Freshwater Algae Toxicity 72h EC50: > 61.1 mg/L (Pseudokirchneriella subcapitata) [ECHA]; Freshwater Crustacean Toxicity 48h LC50: 14.5 mg/L (Daphnia magna) [ECHA] (similar substance); Freshwater Fish Toxicity 96h LC50: > 3.5 mg/L (Danio rerio) [ECHA]; No Marine Data Marine sub-chronic Crustacean Toxicity NOEC (7d) 100 mg/L (Cancer anthonyi) Bioaccumulation Fish BCF: 1.2-74.4 (Lepomis macrochirus) [ECHA];	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2 (≤5%): LD50 Oral: >15000 mg/kg (human) Freshwater Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance); Freshwater Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Marine Water Algae Toxicity 72h EC50: 4717 mg/L (Skeletonema costatum) Marine Water Crustacean Toxcity 48h LC50: 7713 mg/L (Acartia tonsa) Marine Water Fish Toxicity 96h LC50: > 4200 mg/L (Scophthalmus maximus) [Halliburton Sponsored Study]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. Carcinogenicity: Classified as a human carcinogen (IARC Group 1)	
Econolite Liquid	Halliburton	Cement Additive Stabiliser	0.799%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤60%): LD50 Oral: 800 mg/kg (Rat), LD50 Oral: 770 mg/kg (Mouse), LD50 Dermal: > 5000 mg/kg (Rat) (Similar substance), LC50 Inhalation >2.06 mg/L (Rat) 4h (Similar substance) Freshwater Algae Toxicity 72h EC50: > 345 mg/L (Scenedesmus subspicatus) [ECHA]; Freshwater Crustacean Toxicity 48h EC50: 1700 mg/L (Daphnia magna) [OECD SIDS]; Freshwater Fish Toxicity 96h LC50: 1108 mg/L (Danio rerio) [OECD SIDS]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2 (≤60%): Component is naturally occuring and is not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards	Yes
Gascon 469	Halliburton	Cement Additive Stabiliser	0.717%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 <=1% Oral LDL: 500 mg/kg (Rabbit), Dermal LD50: 1350 mg/kg (Rabbit) Freshwater Crustacean Toxicity 48h EC50: 40.4 mg/L (Ceriodaphnia sp.) [ECHA]; Freshwater Fish Toxicity 96h LC50: 45.4 mg/L (Oncorhynchus mykiss)	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Fish Toxicity 96h LC50: 125 mg/L (Gambusia affinis) [OECD SIDS]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2 <=60% Oral LD50: >10,000 mg/kg, Inhalation LC50: >0.69 mg/L (4h) (Rat) Freshwater Algae Toxicity 72h EC50: 440 mg/L (Selenastrum capricornutum) [IUCLID; LOLI]; Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (Ceriodaphnia dubia) [IUCLID; LOLI]; Freshwater Fish Toxicity 96h LC50: 5000 mg/L (Brachydanio rerio) [IUCLID; LOLI]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 <= 100% Component is naturally occuring and is not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards	
Halad-413L	Halliburton	Fluid Loss Additive	0.717%	PRODUCT CEFAS LISTED CONSTITUENT 1 (≤30%): Oral LD50: >2000 mg/kg (Rat) Marine Water Algae Toxicity 72h EC50: 1102 mg/L (Skeletonema costatum) [OSPAR]; Marine Water Crustacean Toxicity 48h LC50: > 2000 mg/L (Acartia tonsa) [OSPAR]; Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [OSPAR]; Bioaccumulation Log Kow: < 3.5 [Halliburton Funded Study]; Marine Water Biodegradation 28d: 6 % [Halliburton Funded Study]; CONSTITUENT 2 (≤100%): Product is naturally occuring and not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards	Yes
SILICALITE LIQUID	Halliburton	Light weight cement additive	0.558%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤60%): SiO2 is a stable substance. In the environment it occurs in different modifications and it is one of the most abundant materials on the Earth's surface. Biodegrability is not applicable for silica since it is inorganic. Additionally, bioaccumulation is not	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				expected. Freshwater Algae Toxicity 72h EC50: 440 mg/L (Selenastrum capricornutum); Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (Ceriodaphnia dubia); Freshwater Fish Toxicity 96h LC50 5000 mg/L (Brachydanio rerio); Source: IUCLID 2000 CONSTITUENT 2 (≤60%): No Hazard - Product is naturally occuring CONSTITUENT 3 (≤1%): Freshwater Fish Toxicity 96h LC50: >1000 mg/L (Brachydanio rerio) Freshwater Crustacean Toxicity 24h LC50: >1000 mg/L (Daphnia magna) Marine Crustacean Toxicity 10d LC50: 50566 mg/kg (Corophium volutator)	
HGS-4K28. Note the SDS 3M Glass Bubbles HGS Series applies to both this product and HGS 8000x (glass beads). Constituents are the same.	3M	Light weight cement additive	0.489%	CONSTITUENT 1 (≤100%): Oral LD50: >2000 mg/kg estimated; Freshwater Algae Toxicity 96h EC50: >1000 mg/L (Pseudokirchnerella subcapitata); Freshwater Crustacean Toxicity 96h EC50: >1000 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: >1000 mg/L (Danio rerio); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2 (≤10%): Freshwater Algae Toxicity 72h EC50: 440 mg/L (Pseudokirchneriella subcapitata); Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (Ceriodaphnia dubia); Freshwater Fish Toxicity 96h LC50: 5000 mg/L (Danio rerio); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable.	Yes
HGS 8000x. Note the SDS 3M Glass Bubbles HGS Series applies to both this product and HGS-4K28 (glass beads). Constituents are the same.	3M	Light weight cement additive	0.489%	CONSTITUENT 1 (≤100%): Oral LD50: >2000 mg/kg estimated; Freshwater Algae Toxicity 96h EC50: >1000 mg/L (Pseudokirchnerella subcapitata); Freshwater Crustacean Toxicity 96h EC50: >1000 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: >1000 mg/L (Danio rerio); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2 (≤10%): Freshwater Algae Toxicity 72h EC50: 440 mg/L (Pseudokirchneriella subcapitata); Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (Ceriodaphnia dubia); Freshwater Fish Toxicity 96h LC50: 5000 mg/L (Danio rerio); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable.	Yes
CFR-8L	Halliburton	Friction Reducer	0.483%	PRODUCT CEFAS LISTED	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				CONSTITUENT 1 (≤60%): Oral LD50: >5000 mg/kg (Rat) Marine Water Algae Toxicity 72h EC50: 7631.73 mg/L (Skeletonema costatum); Marine Water Crustacean Toxicity 48h LC50: 2200 mg/L (Acartia tonsa); Marine Water Fish Toxicity 96h LC50: 1006 mg/L (Scophthalmus maximus); Fresh Water Crustacean Toxicity 48h LC50: >100 mg/L (Daphnia magna); Bioaccumulation Log Pow: < 0; Inherently biodegradable: Biodegradation 28d: 38%; CONSTITUENT 2 (≤100%): Componenet is naturally occuring and not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards	
NF-6	Halliburton	Reduces air entrainment into cement slurry	0.379%	PRODUCT CEFAS LISTEDPRODUCT DATAMarine Water Algae Toxicity 72h EC50: 1100 mg/L (Skeletonema costatum) [Halliburton Funded Study];Marine Water Crustacean Toxicity 48h LC50: > 1000 mg/L (Acartia tonsa) [Halliburton Funded Study];Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [Halliburton Funded Study];Marine Water Biodegradation 28d: 70% [Halliburton Funded Study];CONSTITUENT 1 (≤10%)Marine Algae Toxicity 72h EC50: 991.02 mg/L (Skeletonema costatum)Marine Crustacean Toxicity 48h LC50: 2500 mg/L (Acartia tonsa);Marine Fish Toxicity 96h LC50: >3200 mg/L (Scophthalmus maximus);Bioaccumulation: Calculated Log Pow: 7.45CONSTITUENT 2 (≤5%):Oral LD50: >15900 mg/kg (Mouse), Inhalation LC50: >5 mg/L (4h) (Rat)Marine Algae Toxicity 72h EC50: 41 mg/L (Skeletonema costatum)Marine Crustacean Toxicity 48h LC50: >10000 mg/L (Acartia tonsa);Marine Fish Toxicity 96h LC50: >1800 mg/L (Scophthalmus maximus);Bioaccumulation: Calculated Log Pow: 4.28CONSTITUENT 3 (≤5%)Oral LD50: > 5000 mg/kg (Rat), Dermal LD50: >5000 mg/kg (Guinea Pig)Marine Algae Toxicity 72h EC50: 6488.87 mg/L (Skeletonema costatum)Marine Crustacean Toxicity 48h LC50: 5085.71 mg/L (Acartia tonsa);Marine Fish Toxicity 96h LC50: >5600 mg/L (Scophthalmus maximus);Bioaccumulation: Calculated Log Pow: 22.69 (MW>700)CONSTITUENT 4 (≤10%)No Hazard Product is naturally occuringCONSTITUENT 5 (≤100%)Oral LD50: 90 mg/kg (Mouse) (Similar Substance)Marine Algae Toxicity 72h EC50: >3200 mg/L (Skeletonema costatum)Marine Crustacean Toxicity 48h LC50: >10000 mg/L (Acartia tonsa);Marine Fish Toxicity 96h LC50: >5600 mg/L (Scophthalmus maximus);Bioaccumulation: Calculated Log Pow: 7.09No data available to indicate product or componetns present at greater than 0.1% are chronic health hazards	Yes
SCR-100L	Halliburton	Cement Retarder	0.378%	PRODUCT CEFAS LISTED PRODUCT DATA Oral Toxicity LD50: >5000 mg/kg (Rat), Dermal LD50 : >2000 mg/kg (Rabbit)	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Fish Toxicity 96h LC50: 4900 mg/L (Oncorhynchus mykiss) Freshwater Crustacean Toxicity 48h LC50: 2800 mg/L (Daphnia magna) Marine Water Algae Toxicity 72h EC50: > 3300 mg/L (Skeletonema costatum) [Halliburton Funded Study]; Marine Water Crustacean Toxicity 48h LC50: > 2000 mg/L (Acartia tonsa) [Halliburton Funded Study]; Marine Water Fishn Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [Halliburton Funded Study]; Marine Water Biodegradation 28d: 14% [Halliburton Funded Study]; Product was tested using OECD 117 no peaks detected MW>700Da. Product is not expected to be bioaccumulating No data available to indicate product or components present at greater than 0.1% are chronic health hazards	
D-AIR 3000L	Halliburton	Defoamer	0.375%	CONSTITUENT 1 (≤100%): LD50 Oral: >5000 mg/kg (Rat) (Similar Substance), LD50 Dermal: >2000 mg/kg (Rat) (Similar Substance), LC 50 Inhalation >2.1 mg/L (Rat) Freshwater Algae Toxicity 96h EC50 : 22 mg/L (Pseudokirchneriella subcapitata) Freshwater Fish Toxicity Data 96h LC50 : >1000 mg/L (Salmo gairdneri) Freshwater Crustacean Toxicity 48h EC50: 480 mg/L (Daphnia magna) Readily Biodegradable (77-81% @28d) Bioaccumulation: Log Pow >7 CONSTITUENT 2 (≤60%): LD50 Oral: >2000 mg/kg (Rat), LD50 Dermal: >8000 mg/kg (Rat), LC50 Inhalation: >0.17 mg/L (4h) Marine Water Algae Toxicity 72h EC50: 426 mg/L (Skeletonema costatum) [OSPAR]; Marine Water Crustacean Toxicity 48h EC50: 433.2 mg/L (Acartia tonsa) [OSPAR]; Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [Halliburton Funded Study]; Bioaccumulation Log Pow: 5.06 [Halliburton Funded Study]; CONSTITUENT 3 (≤1%): Component is a synthetic surface modified Amorphous Silica (CAS #: 7631-86-9); Fish and Invertebrate toxicity testing with Amorphous Silica have shown low hazard for this component. Source: OECD SIDS No data available to indicate product or components present at greater than 1% are chronic health hazards	Yes
HR-6L	Halliburton	Cement Retarder	0.296%	PRODUCT CEFAS LISTED 100% PLONOR	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				CONSTITUENT 1 (≤100%): Componenet is naturally occuring and not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards CONSTITUENT 2 (≤60%): Oral LC50: >5000 mg/L, Inhalation LC50: > 480 mg/m3 Freshwater Fish Toxicity LC50: >1000 mg/L (Danio rerio) Marine Water Algae Toxicity 72h EC50: 301 mg/L (Skeletonema costatum) [Halliburton Funded Study]; Marine Water Crustacean Toxicity 48h LC50: 1261 mg/L (Acartia tonsa) [Halliburton Funded Study]; Bioaccumulation Log Pow: -3.45 (Calculated) [Halliburton Funded Study]; Biodgradation: No data - expected to be inherently biodegradable No data available to indicate product or components present at greater than 0.1% are chronic health hazards	
HR-25L	Halliburton	Cement Retarder	0.0978%	PRODUCT CEFAS LISTED CONSTITUENT 1 (≤60%): No Hazard CONSTITUENT 2 (≤60%): Freshwater Algae Toxicity 72h EC50: 51.4 mg/L (Pseudokirchneriella subcapitata) [ECHA]; Freshwater Crustacean Toxicity 48h EC50: 93.3 mg/L (Daphnia magna) [ECHA]; Freshwater Fish Toxicity 96h LC50: > 100 mg/L (Danio rerio) [ECHA]; Bioaccumulation Log Pow: 0.24 [Halliburton Funded Study]; Marine Water Biodegradation 28d: 85 % [ECHA];	Yes
Latex 4000	Halliburton	Cement Expanding Additive	0.0977%	PRODUCT CEFAS LISTED CONSTITUENT 1 (<60%): Componenet is naturally occuring and not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards CONSTITUENT 2 (<60%): Trade Secret - No Data Available for non-hazardous polymer CONSTITUENT 3 (<1%): LD50 Oral: >2000 and <5000 mg/kg (Rat); LD50 Dermal: >10,000 mg/kg (Rabbit);	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Crustacean Toxicity 48h EC50: 439 mg/L [ECHA]; Marine Water Algae Toxicity 72h EC50: 202.33 mg/L (Skeletonema costatum) [ECHA]; Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [Halliburton Sponsored Study]; Bioaccumulation LogPow: -1.504 [ECHA]; Biodegradation 14d: 100% [ECHA] CONSTITUENT 4 (<0.1%): Oral LD50: 1658 mg/kg (Rat); Inhalation LC50 >1 mg/L (Rat, saturated mist, 4hr) (Similar Substance); Freshwater Algae Toxicity 72h EC50: >100 mg/L (Desmodesmus subspicatus); Freshwater Crustacean Toxicity 24h LC50: 610 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: 121 mg/L (Lepomis macrochirus); Biodegradation(28 Days): 10% (OECD306) CONSTITUENT 5 (<0.1%): LD50 Oral: 53 mg/kg (Rat); LD50 Dermal: 200 mg/kg (Rabbit); LC50 Inhalation: 0.11 mg/L (4h) (Rat); Freshwater Crustacean Toxicity EC50 (48h) 0.18 mg/L (Daphnia magna) (Similar Substance); Freshwater Fish Toxicity LC50 (96h) 0.19 mg/L (Oncorhynchus mykiss) (Similar substance); Bioaccumulation: Log Pow= -0.26 CONSTITUENT 6 (<0.1%): LD50 Oral: 1020 mg/kg (Rat); LD50 Dermal: >2000 mg/kg (Rat); Bioaccumulation: Log Pow= 0.99 CONSTITUENT 7 (<0.1%): LD50 Oral: 481 mg/kg (Rat); LD50 Dermal: 1008 mg/kg (Rat); LC50 Inhalation: 1.23 mg/L (4h) (Rat); Freshwater Algae Toxicity 72h EC50: 0.11-0.16 mg/L (Pseudokirchneriella subcapitata); Freshwater Crustacean Toxicity 48h EC50: 0.18 mg/L (Daphnia magna); Freshwater Fish Toxicity LC50 (96h): 0.08 mg/L (Oncorhynchus mykiss); Bioaccumulation: Log Pow = 0.7	

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
TUNED SPACER E+	Halliburton	Mud/Cement Spacer	0.0977%	LC50 Inhalation: 200 mg/L (Rat) 1h	Yes
Tuned Spacer III	Halliburton	Mud/Cement Spacer	0.0977%	CONSTITUENT 1 (≤30%): Marine Water Acute Algae Toxicity 72h EC50: > 10000 mg/L (Skeletonema costatum) [Halliburton Funded Study]; Marine Water Acute Crustacean Toxicity 48h LC50: > 10000 mg/L (Acartia tonsa) [Halliburton Funded Study]; Marine Water Acute Fish Toxicity 96h LC50: > 5600 mg/L (Scophthalmus maximus) [Halliburton Funded Study]; Constituent is a clay mineral of soil and therefore biodegradability is not applicable. Constituent is a clay mineral of soil and therefore bioaccumulation is not applicable. CONSTITUENT 2 (≤10%): Oral LD50: >5000 mg/kg (Similar Substance), Inhalation LC0 >0.139 mg/L (Similar Substance), Dermal LC50: > 5000 mg/kg (Rabbit) Freshwater Acute Algae Toxicity 72h EC50: > 10000 mg/L (Scenedesmus subspicatus) [OECD SIDS] (similar substance); Freshwater Acute Crustacean Toxicity 24h EC50: > 10000 mg/L (Daphnia magna) [OECD SIDS] (similar substance); Freshwater Acute Fish Toxicity 72h LC50: > 10000 mg/L (Cyprinus carpio) [LOLI]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 (≤5%): Component is naturally occuring and not intrinsically hazardous. CONSTITUENT 4 (≤1%): Oral LD50 5400 mg/kg (Rat), Dermal LD50 >2000 mg/kg Freshwater Acute Crustacean Toxicity 48h EC50: > 50 mg/L (Daphnia magna) [ECHA]; Freshwater Acute Fish Toxicity 96h LC50: > 100 mg/L (Pimephales promelas) [ECHA]; Freshwater Acute Plant Toxicity 72h EC50: 990 mg/L (Lactuca sativa) [ECHA]; Bioaccumulation BCF: 3.2 [ECHA]; Freshwater Biodegradation 28d: 97 % [ECHA]; CONSTITUENT 5 (≤100%): Oral LD50: >15000 mg/kg (Human) Freshwater Acute Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance);	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Acute Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 6 (≤1%): Oral LD50: >15000 mg/kg (Human) (Similar Substance) Freshwater Acute Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance); Freshwater Acute Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable.	
ChannelFix	Halliburton	Cement Additive	0.0977%	CONSTITUENT 1 (≤100%): limited data - nonhazardous polymer Marine Algae Toxicity 72h EC50 >1000 mg/L (Skeletonema costatum); Marine Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus).	Yes
SEM-8	Halliburton	Emulsifier	0.0687%	PRODUCT CEFAS LISTEDCONSTITUENT 1 (≤100%):Oral LD50: >2000 mg/kg (Rat) (Similar Substance), Dermal LD50: >2000 mg/kg (Rat) (Similar Substance)Marine Water Algae Toxicity 72h EC50: 32 mg/L (Selenastrum capricornutum) [Madsen et al., 2002] (similar substance);Freshwater Algae Toxicity 72h ErC50: 32 mg/L (Pseudokirchneriella subcapitata) (similar substance)Freshwater Crustacean Toxicity 96h EC50: 1.17 mg/L (Daphnia magna) [Madsen et al., 2002] (similar substance);Freshwater Fish Toxicity 96h LC50: 1-2.5 mg/L (Salmo trutta) [Madsen et al., 2002] (similar substance);Marine Water Algae Toxicity 72h EC50: 73.52 mg/L (Skeletonema costatum)Marine Water Crustacean Toxicity LC50 (48h) 232.5 mg/L (Acartia tonsa)Marine Water Fish Toxicity LC50 (96h) 350 mg/L (Scophthalmus maximus)Not Bioaccumulative; LogPow 0.7Marine Water Biodegradation 28d: 61% [OSPAR];CONSTITUENT 2 (≤30%):Oral LD50: 5840 mg/kg (Rat), Dermal LD50: 12870 mg/kg (Rabbit), Inhalation LC50: 72.6 mg/L (Rat) 4h VaporFreshwater Algae Toxicity 72h EC50: > 1000 mg/L (Scenedesmus subspicatus) [IUCLID];Freshwater Crustacean Toxicity 24h EC50: > 10000 mg/L (Daphnia magna) [ECHA];Freshwater Fish Toxicity 96h LC50: 9640 mg/L (Pimephales promelas) [ECHA];Marine Water Fish Toxicity 96h LC50: 9640 mg/L (Pimephales promelas);Marine Water Crustacean Toxicity 48h LC50: 1400 mg/L (Crangon crangon);Marine Water Algae Toxicity 72h EC50: >1000 mg/L (Scenedesmus subspicatus);Bioaccumulation Log Pow: 0.15 [IUCLID]; LogKow < 4.5Readily biodegradable (53% @ 5d)Freshwater Biodegradation 14d: 83% [HSDB];CONSTITUENT 3 (≤30%):No Hazard - Product is naturally occuringCONSTITUENT 4 (≤1%):Oral LD50: 600 mg/kg (Rat) (Similar Substance), Dermal LD50: >2000 mg/kg (Rat) Similar SubstanceFreshwater Algae Toxicity 96h EC50: 0.7 mg/L (Selenastrum capricornutum) [CCID] (similar substance);Freshwater	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Crustacean Toxicity 48h EC50: 0.2 mg/L (Daphnia magna) (similar substance);Freshwater Crustacean Toxicity 48h EC50: 0.39 mg/L (Ceriodaphnia dubia) [CCID] (similar substance);Freshwater Fish Toxicity 96h LC50: 1.4 mg/L (Pimephales promelas) [CCID] (similar substance);No Marine DataNot BioaccumulativeBioaccumulation BCF: 12.7-237 [ECHA] (similar substance);Freshwater Biodegradation 28d: 72% [ECHA] (similar substance);No data available to indicate product or components present at greater than 0.1% are chronic health hazards	
Microbond	Halliburton	Expander	0.0586%	CONSTITUENT 1 (≤ 100%): Oral LD50: 3000 mg/kg, Inhalation LD50: >3.26 mg/L (4h), Dermal LD50: >2500 mg/kg (Rabbit) Freshwater Algae Toxicity 72h EC50: > 100 mg/L (Selenastrum capricornutum) [OECD SIDS]; Freshwater Crustacean Toxicity 48h EC50: > 100 mg/L (Daphnia magna) [OECD SIDS]; Freshwater Fish Toxicity 96h EC50: > 100 mg/L (Oryzias latipes) [OECD SIDS]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2 (≤ 30%): Oral LD50: >2000 mg/kg (Rat) (Similar Substance), Dermal LD50: >2000 mg/kg (Rat) (Similar Substance), Inhalation LC50: 1.9 mg/L air (Rat) 4h (Similar substance) Freshwater Algae Toxicity 72h EC50: 3.6 mg/L (Desmodesmus subspicatus) [ECHA]; Freshwater Crustacean Toxicity 48h EC50: 5.4 mg/L (Daphnia magna) [ECHA]; Freshwater Fish Toxicity 96h EC50: > 100 mg/L (Danio rerio) [ECHA]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 (≤ 10%): Oral LD50: 7340 mg/kg (Rat), Dermal LD50: >2500 mg/kg (Rabbit), Effect concentrations in the aquatic environment are attributable to a change in pH value. Freshwater Crustacean Toxicity 48h EC50: 49.1 mg/L (Daphnia magna) [ECHA]; Marine Water Crustacean Toxicity 96h LC50: 158 mg/L (Crangon septemspinosa) [ECHA]; Freshwater Fish Toxicity 96h LC50: 50.6 mg/L (Oncorhynchus mykiss) [ECHA]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 4 (≤ 5%): LD50 Oral: 4220 mg/kg (Rat), Inhalation LD50: >4.74 mg/L (4h) (Rat) Freshwater Algae Toxicity 96h EC50: 650 mg/L (Navicula seminulum) [US EPA ECOTOX];	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Crustacean Toxicity 48h EC50: 1020 mg/L (Ceriodaphnia dubia) [ECHA]; Freshwater Fish Toxicity 96h LC50: 7100 mg/L (Lepomis macrochirus) [ECHA]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable.	
MICROBOND HT Component	Halliburton	Cement Additive	0.0586%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤100%): Oral LD50: 3990 mg/kg (Rat) Magnesium oxide has been reported to be a respiratory irritant if airborne particles (i.e., magnesium oxide fume) are inhaled (NIOSH 1994, NJ DOH 2003, IPCS 2010). Inhalation of magnesium oxide fume may result in mechanical irritation and flu-like symptoms, including headache, fever and chills, aches, and cough (NJ DOH 2003, IPCS 2010). Health effects of magnesium oxide are not known to be chronic in nature, rather, they have been reported to be short term, lasting hours to days (NIOSH 1994, NJ DOH 2003, IPCS 2010). To prevent respiratory irritation, respirators should be worn when exposed to magnesium oxide fume (NIOSH 1994, NJ DOH 2003, IPCS 2010). Magnesium oxide, its production byproducts, and its breakdown products are ionic compounds that are commonly found in seawater and minerals (USDA 2007, Atkins et al. 2008, Baird and Cann 2008, USGS 2017). As described in the “Properties of the Substance” section and Evaluation Question 4, magnesium oxide is insoluble in water, making it unlikely to contaminate water systems and giving it low bioavailability in terrestrial systems (USDA 2007). No data was available in the IUCLID for this component, as magnesium ions are a major component of all natural waters. Source: IUCLID 2000 No data available to indicate product or components present at greater than 1% are chronic health hazards	Yes
BENTONITE	Halliburton	Viscosifier	0.0489%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤ 100%): Component is naturally occuring and not intrinsically hazardous. CONSTITUENT 2 (≤ 1%): Oral LD50: >15000 mg/kg (Human) Freshwater Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Canada] (similar substance); Freshwater Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 (≤ 5%): Oral LD50: >15000 mg/kg (Human) (Similar Substance) Freshwater Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance); Freshwater Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 4 (≤ 1%): Oral LD50: >15000 mg/kg (Human) (Similar Substance) Freshwater Crustacean Toxicity 24h LL50: > 10000 mg/L (Daphnia magna) [Health Canada] (similar substance); Freshwater Fish Toxicity 96h LL0: 10000 mg/L (Danio rerio) [Health Canada] (similar substance); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. Carcinogenicity: Classified as a human carcinogen (IARC Group 1)	
IsoGuard	Halliburton	Additive	0.0489%	CONSTITUENT 1 (≤100%): limited data - nonhazardous polymer LD50 Oral: >5000 mg/kg (rat); LD50 Dermal: >1000 mg/kg (rabbit); LC50 Inhalation: >5 mg/L (Rat) 4h; Freshwater Fish Toxicity 96h LC50: >10000 mg/L (Lepomis macrochirus) (similar substance); Bioaccumulation: No information available; Biodegradation: Readily biodegradable (~100% @ 28d) CONSTITUENT 2 (≤10%): Component is naturally occuring and not intrinsically hazardous.	Yes
Tuned Defense	Halliburton	Cement Spacer	0.0489%	CONSTITUENT 1 (≤ 60%): Component is naturally occuring and not intrinsically hazardous. Marine water Crustacean Toxicity 96h TLM: >1,000,000 mg/L (Mysidopsis bahia) CONSTITUENT 2 (≤ 30%):	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				No data available; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable; Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 (≤ 30%): Oral LD50: 2000-6450 mg/kg (Rat); Dermal LD50: >2000 mg/kg (rat); Inhalation LC50: >3 mg/L (rat, dust, 4h) Freshwater Algae Toxicity 72h EC50: > 14 mg/L (growth rate) (Desmodesmus subspicatus); Freshwater Crustacean Toxicity 48h EC50: > 100 mg/L (saturated solution) (Daphnia magna); Freshwater Fish Toxicity 96h LC50: > 100 mg/L (saturated solution) (Oncorhynchus mykiss); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable; Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 4 (≤ 10%): Acrylic polymer - not toxic; Bioaccumulation: No information available; Biodegradation: Not readily biodegradable. CONSTITUENT 5 (≤ 10%): Inhalation LC50: > 0.046 mg/L (Rat) 4h; Freshwater Algae Toxicity 96hr ErL50: > 1000 mg/L (Selenastrum capricornutum); Freshwater Crustacean Toxicity 48h EC50: > 1000 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: > 1000 mg/L (Pimephales promelas); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable; Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 6 (≤ 5%): PLONOR Oral LD50: > 5000 mg/kg (Rat); Inhalation LC50: > 5 mg/L (Rat) 4h; Freshwater Algae Toxicity 72h EC50: > 100 mg/L (Selenastrum capricornutum); Freshwater Crustacean Toxicity 48h LC50: > 100 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: > 100 mg/L (Oncorhynchus mykiss); Bioaccumulation: Log Pow = -2.76 (calc); Biodegradation: Readily biodegradable (95% @ 28d). CONSTITUENT 7 (≤ 5%): PLONOR Oral LD50: 5400 mg/kg (Rat); Dermal LD50: >2000 mg/kg (rat); Freshwater Algae Toxicity 72h EC50: 18000 mg/L (Chlorella vulgaris); Freshwater Crustacean Toxicity 48h LC50: > 100 mg/L (Daphnia magna);	

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Fish Toxicity 96h LC50: 1516 mg/L (Lepomis macrochirus); Bioaccumulation: Log Pow = -1.61 to -1.80; Biodegradation: Readily biodegradable (97% @ 28d). CONSTITUENT 8 (≤ 1%): Oral LD50: 10000 mg/kg (Rat); Inhalation LC50: > 16 mg/L (Rat) 1h (similar substance); Freshwater Algae Toxicity 72h EC50: > 100 mg/L (Pseudokirchnerella subcapitata); Freshwater Crustacean Toxicity 48h LC50: 1955 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LL50: >100 mg/L (Danio Rerio); Bioaccumulation: No information available; Biodegradation: No information available. CONSTITUENT 9 (≤ 1%): Oral LD50: > 15000 mg/kg (human); Freshwater Algae Toxicity 72h EC50: 440 mg/L (Pseudokirchneriella subcapitata); Freshwater Crustacean Toxicity 48h LC50: > 10000 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: 10000 mg/L (Danio rerio); Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable; Biodegradation: Substance is inorganic - biodegradation is not applicable. Class 1A Carcinogen	
GasStop Additive	Halliburton	Cement Additive	0.0293%	PRODUCT CEFAS LISTED PRODUCT DATA Marine Algae toxicity EC50: >3300 mg/L (Skeletonema costatum [HES Interal Study] Marine Fish toxicity LC50: >1000 mg/L (Scophthalmus maximus) [HES study] Marine Crustacean toxicity EC50: > 2000 mg/L (Acartia tonsa) [HES study] Bioaccumulation Log Pow: <0 OECD 117 [HES Study] Biodegradation 0% (OECD 306) [HES Study]	Yes
Halad-344	Halliburton	Fluid Loss Additive for high temperature	0.0293%	PRODUCT CEFAS LISTED CONSTITUENT 1 <=100% Marine Water Algae Toxicity EC50: >3300 mg/L (Skeletonema costatum [HES Interal Study] Marine Water Crustacean Toxicity EC50: > 2000 mg/L (Acartia tonsa) [HES study] Marine Fish Toxicity LC50: >1000 mg/L (Scophthalmus maximus) [HES study] Bioaccumulation Log Pow: <0 OECD 117 [HES Study] 0% (OECD 306) [HES Study] CONSTITUENT 2 <=5%	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				PLONOR CONSTITUENT 3 <= 5% PLONOR CONSTITUENT 4 <=5% PLONOR Effect concentrations in the aquatic environment are attributable to a change in pH value. Oral LD50: 7340 mg/kg (Rat), Dermal LD50: >2500 mg/kg (Rabbit) Freshwater Crustacean Toxicity 48h EC50: 49.1 mg/L (Daphnia magna) [ECHA]; Freshwater Fish Toxicity 96h LC50: 50.6 mg/L (Oncorhynchus mykiss) [ECHA]; Marine Water Crustacean Toxicity 96h LC50: 158 mg/L (Crangon septemspinosa) [ECHA]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. PRODUCT DATA Oral LD50: >2000 mg/kg (similar Product) Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [Halliburton Funded Study]; Bioaccumulation Log Pow: <0 [Halliburton Funded Study]; Marine Water Biodegradation 28d: 0% [Halliburton Funded Study];	
ALDACIDE G	Halliburton	Biocide	0.0173%	PRODUCT CEFAS LISTEDCONSTITUENT 1 (≤30%):Oral LD50: 252 mg/kg (Rat)Dermal LD50: 1800 mg/kg (Rabbit)Inhalation LC50: 40.1 ppm (Rat) 4hFreshwater Algae Toxicity 72h EC50: 0.61 mg/L (Desmodesmus subspicatus)Freshwater Crustacean toxicity 48h LC50: 0.35 mg/L (Daphnia magna)Freshwater Fish Toxicity 96h LC50: 10 mg/L (Lepomis macrochirus) Marine Algae Toxicity 72h EC50: 0.5 mg/L (Skeletonema costatum) Marine Crustacean Toxicity 48h LC50: 0.1 mg/L (Acartia tonsa)Marine Fish Toxicity 96h LC50: 60 mg/L (Scophthalmus maximus)Bioaccumulation Log Pow: -0.36Readily biodegradable (75% @ 28d)CONSTITUENT 2 (≤1%):LD50 Oral: 6200 mg/kg (Rat)LD50 Dermal: 15840 mg/kg (Rabbit)LC50 Inhalation: 22500 ppm (Rat) 8hFreshwater Algae Toxicity 72h EC50: 22000 mg/L (Pseudokirchnerella subcapitata);Freshwater Crustacean Toxicity 48h EC50: 22000 mg/L (Daphnia obtuse);Freshwater Fish Toxicity 96h LC50: 15400 mg/L (Lepomis macrochirus);Readily biodegradable (95% @ 20d)Not Bioaccumulative; BCF=1CONSTITUENT 3 (≤100%):Component is naturally occuring and not intrinsically hazardous.	Yes
GasStop EXP	Halliburton	Cement Additive	0.0172%	CONSTITUENT 1 (≤60%) Oral LD50: >5000 mg/Kg (Rat), Dermal LD50: >2000 mg/Kg (Rabbit), Inhalation LC50: 0.21 mg/L	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Freshwater Fish Toxicity: >100 mg/L (Onchorhynchus mykiss) [Supplier data] Bioaccumulation Calculated Log Pow: >4 [REACH] Biodegradation 15-35% @ 28 days CONSTITUENT 2 (≤60%) Marine Algae toxicity EC50: >3300 mg/L (Skeletonema costatum [HES Interal Study] Marine Fish toxicity LC50: >1000 mg/L (Scophthalmus maximus) [HES study] Marine Crustacean toxicity EC50: > 2000 mg/L (Acartia tonsa) [HES study] Bioaccumulation Log Pow: <0 OECD 117 [HES Study] Biodegradation 0% (OECD 306) [HES Study] CONSTITUENT 3 (≤5%) Oral LD50: >30000 mg/kg Marine Algae toxicity EC50: 87.02 mg/L (Skeletonema costatum) [HES Study] Marine Fish toxicity LC50: >87.02 mg/L (Cyprinodon variegatus) [HES Study] Marine Crustacean toxicity LC50: 2319 mg/L (Acartia tonsa) [HES Study] Biodegradation: 48% @ 28 days (OECD 306) CONSTITUENT 4 (≤1%) Oral LD50: >39800 mg/kg Inhalation LC50: >5.27 mg/L Marine Algae toxicity EC50: 258 mg/L (Skeletonema costatum) [HES Study] Marine Fish toxicity LC50: >258 mg/L (Cyprinodon variegatus) [HES Study] Marine Crustacean LC50: 2319 mg/L (Arcartia tonsa) [HES Study] Biodegradation 56% @ 28 days (Marine BODIS) [HES Study] CONSTITUENT 5 (≤5%) Oral LD50: >5000 mg/kg (Rat), Dermal LC50: >5000 mg/L (Rat), Inhalation LC50: >200 mg/L (Rat) Marine Algae toxicity EC50: >10000 mg/L (Skeletonema costatum) [HES Study] Marine Fish toxicity LC50: >10000 (Scophthalmus Maximus) [HES Study] Marine Crustacean toxicity EC50: >10000 mg/L (Acartia tonsa) [HES Study] Log Pow: -5.2 (OECD 117) [HES Study] Biodegradation 8% @ 28 days (Marine BODIS) [HES Study]	
Starcide	Halliburton	Biocide	0.0172%	PRODUCT CEFAS LISTED CONSTITUENT 1 (≤100%) LD50 Oral 900 mg/kg (Rat), LC50 Inhalation 2 mg/L (Rat, 4 hr, aerosol) Water Algae Toxicity EC50(72 h)=5.7 mg/L (Desmodesmus subspicatus) Marine Algae Toxicity EC50()=3.35 mg/L (Skeletonema costatum) Marine Fish Toxicity LC50(96 h)=135.21 mg/L (Scophthalmus maximus) Toxicity to Microorganisms EC50: 44 mg/L (activated sludge) Freshwater Crustacean Toxicity EC50(48 h)=37.9 mg/L (Daphnia magna)	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Marine Crustacean Toxicity EC50(48 h)=4.1 mg/L (Acartia tonsa) Freshwater Crustacean Toxicity NOEC(21 d)=1.3 mg/L (Daphnia magna)	
SUPER CBL EXP	Halliburton	Cement Additive	0.0100%	CONSTITUENT 1 (≤60%) Oral LD50: 24 g/Kg (Rat) Inhalation LC50: 2062 ppm (Rat) 4h Freshwater Fish Toxicity: >1000 mg/L (Onchorhynchus mykiss) Bioaccumulation Log Pow: 5.71 Biodegradability: 15-35% @ 28 days CONSTITUENT 2 (≤60%) Substance not expected to exhibit toxic effects in the aquatic environment due to low solubility in transformation/dissolution assays. Inhalation LC50: 0.888 mg/L (Rat) 4 h Freshwater Algae Toxicity 72h NOEC: ≥ 0.004 mg/L (Pseudokirchneriella subcapitata) [ECHA]; Freshwater Algae Toxicity 72h NOEC: >100 mg/L (Selenastrum capricorntum) [IUCLID 2000]; Freshwater Crustacean Toxicity 48h EC50: 1.9 mg/L (Ceriodaphnia dubia) [ECHA] (similar substance); Freshwater Crustacean Toxicity 48h NOEC: >100 mg/L (Daphnia magna) [IUCLID 2000]; Freshwater Fish Toxicity 96h LC50: 0.078-0.108 mg/L (Salmo salar) [ECHA]; Freshwater Fish Toxicity 96h NOEC: >100 mg/L(Salmo trutta) [IUCLID 2000]; Marine Water Crustacean Toxicity LC50 48h: 190 mg/L (OSPAR, 2000) Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 (≤5%) Oral LD50: >30000 mg/kg Freshwater Fish Toxicity 24 h LC50 >1000 mg/L Marine Water Algae toxicity EC50: 87.02 mg/L (Skeletonema costatum) [HES Study] Marine Water Crustacean toxicity LC50: 2319 mg/L (Acartia tonsa) [HES Study] Marine Water Fish toxicity LC50: >87.02 mg/L (Cyprinodon variegatus) [HES Study] 48% @ 28 days (OECD 306) Biodegradaiton data for other sorbitan esters finds the test substances not to be readily biodegradable. Sorbitan monolaurate (1338-39-2, sorbitan monooleate (1338-43-8, and sorbitan fatty acids C6-10, tetraester (228573-47-5) were not readily biodegradable in OECD 301d studies. CONSTITUENT 4 (≤5%) Oral LD50: 5000 mg/kg (Rat)	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Inhalation LC50: 12.6 mg/L (Rat) 4h Marine Water Algae Toxicity EC50: >10000 mg/L (Skeletonema costatum) [HES Study] Marine Water Crustacean Toxicity EC50: >10000 mg/L (Acartia tonsa) [HES Study] Marine Water Fish Toxicity LC50: >10000 (Scophthalmus Maximus) [HES Study] Bioaccumulation Log Pow: -5.2 (OECD 117) [HES Study] 8% @ 28 days (Marine BODIS) [HES Study] IUCLID BioaccumulationL Similar modified clays have been shown to have very low solubility in water or hexanol. Co-efficient partition is not feasible. CONSTITUENT 5 (≤5%) Oral LD50: 39800 mg/kg (Rat) Freshwater Fish Toxicity 96h LC50: > 1000 mg/L (Oncorhynchus mykiss) [US EPA HPVIS]; Marine Water Algae Toxicity 72h EC50: 5073.11 mg/L (Skeletonema costatum) [Halliburton Funded Study]; Marine Water Crustacean Toxicity 48h LC50: > 10000 mg/L (Acartia tonsa) [OSPAR]; Bioaccumulation log Pow: 1.8 [Duncan]; Marine Water Biodegradation 28d: 61 % [ERT Ltd.]; CONSTITUENT 6 (≤1%) Oral LD50: >39800 mg/kg Inhalation LC50: >5.27 mg/L Freshwater Crustacean Toxicity EC50(48h): 1000 mg/L (Daphnia magna) Marine Water Algae Toxicity EC50: 258 mg/L (Skeletonema costatum) [HES Study] Marine Water Crustacean LC50: 2319 mg/L (Arcartia tonsa) [HES Study] Marine Water Fish Toxicity LC50: >258 mg/L (Cyprinodon variegatus) [HES Study] Bioaccumulation BCF values of 0.9 - 36.5 L/Kg ww Not bioaccumulative Readily biodegradable Component was found to be 88.9% biodegradable in activated sludge in 28 days. (study report 2006-02-06 as cited in ECHA reg) N/A56% @ 28 days (Marine BODIS) [HES Study]	
BARAZAN D	Halliburton	Viscosifier	0.00977%	PRODUCT CEFAS LISTED CONSTITUENT 1 (≤100%): Freshwater Crustacean toxicity 48h LC50: 980 mg/L (Daphnia magna) Freshwater Fish Toxicity 96h LC50: 490 mg/L (Oncorhynchus mykiss) Marine Invertebrate Toxicity TLM96: >75000 ppm (Mysidopsis bahia) Biodegradable. (93% @ 28d) CONSTITUENT 2 (≤1%):	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				Oral LD50: 200 mg/kg (Rat) Dermal LD50: 12700 mg/kg (Rabbit) Inhalation LC50: 2.44 mg/L (Rat) 4h Freshwater Algae Toxicity 72h EC50: > 100 mg/L (Desmodesmus subspicatus) Freshwater Crustacean toxicity 21d NOEC: 3.19 mg/L (Daphnia magna) Marine Invertebrate Toxicity 96h LC50: 53.2 mg/L (Americamysis bahia) Bioaccumulation Log Pow: -1.15 BCF = 3.2 Calculated Readily Biodegradable (90% @ 19d)	
BARAZAN D Plus	Halliburton	Viscosifier	0.00977%	PRODUCT CEFAS LISTED CONSTITUENT 1 (≤100%): Freshwater Crustacean toxicity 48h LC50: 980 mg/L (Daphnia magna) Freshwater Fish Toxicity 96h LC50: 490 mg/L (Oncorhynchus mykiss) Marine Invertebrate Toxicity TLM96: >75000 ppm (Mysidopsis bahia) Biodegradable. (93% @ 28d) CONSTITUENT 2 (≤1%): Oral LD50: 200 mg/kg (Rat) Dermal LD50: 12700 mg/kg (Rabbit) Inhalation LC50: 2.44 mg/L (Rat) 4h Freshwater Algae Toxicity 72h EC50: > 100 mg/L (Desmodesmus subspicatus) Freshwater Crustacean toxicity 21d NOEC: 3.19 mg/L (Daphnia magna) Marine Invertebrate Toxicity 96h LC50: 53.2 mg/L (Americamysis bahia) Bioaccumulation Log Pow: -1.15 BCF = 3.2 Calculated Readily Biodegradable (90% @ 19d)	Yes
BridgeMaker II LCM	Halliburton	Lost Circulation Control	0.00977%	PRODUCT CEFAS LISTED CONSTITUENT 1 (≤60%): Oral LD50: >5000 mg/kg (Rat) Dermal LD50: >2000 mg/kg (Rat) Inhalation LC50: >37.8 mg/L (Rat) Marine Water Algae toxicity EC50: >10000 mg/L (Skeletonema costatum) Marine Water Crustacean Toxicity EC50: >10000 mg/L (Acartia tonsa) Marine Water Fish toxicity LC50: >10000 (Cyprinodon variegatus) Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 2(≤60%): Article - no data and non-hazardous	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				CONSTITUENT 3 (≤10%) Product is an inert, man-made substance and not intrinsically hazardous. TWA(as dust):10 mg/m3 Freshwater Algae Toxicity 96h EC50: >1000 mg/L (Pseudokirchneriella subcapitata) [ECHA]; Freshwater Crustacean Toxicity 96h EC50: >1000 mg/L (Daphnia magna) [ECHA]; Freshwater Fish Toxicity 96h LC50: >1000 mg/L (Danio rerio) [ECHA]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable.	
SA-1015	Halliburton	Suspension Agent	0.00977%	PRODUCT CEFAS LISTED PRODUCT DATA Freshwater Algae Toxicity 72h EC50: >100 mg/L (Scenedesmus subspicatus); Freshwater Crustacean Toxicity 48h EC50: >100 mg/L (Daphnia magna); Freshwater Fish Toxicity 96h LC50: >100 mg/L (Oncorhynchus mykiss); Marine Water Algae Toxicity 72h EC50: > 5600 mg/L (Skeletonema costatum); Marine Water Crustacean Toxicity 48h LC50: 234.22 mg/L (Acartia tonsa); Marine Water Fishn Toxicity 96h LC50: > 234.22 mg/L (Cyprinodon variegatus); Readily biodegradable (95% at 28 days); Bioaccumulation Log Pow: 0	Yes
SA-541	Halliburton	Suspension Agent	0.00977%	PRODUCT CEFAS LISTED 100% PLONOR CONSTITUENT 1 (≤1%) Algae Toxicity EC50 (72h) No effects at saturation (Scenedesmus subspicatus) Toxicity to Fish LC50 (96h) No effects at saturation (Brachydanio rerio) Toxicity to Invertebrates EC50 (24h) No effects at saturation (Daphnia magna) CONSTITUENT 2 (≤100%) Toxicity to Invertebrates EC50 (24h) No effects at saturation (Daphnia magna) Component is an inert, man-made substance and not intrinsically hazardous. CONSTITUENT 3 (≤1%) Effect concentrations in the aquatic environment are attributable to a change in pH value Freshwater Acute Crustacean Toxicity 48h EC50: 40.4 mg/L (Ceriodaphnia sp.) [ECHA]; Freshwater Acute Fish Toxicity 96h LC50: 125 mg/L (Gambusia affinis) [OECD SIDS]; Toxicity to Fish LC50(48h) 189 mg/L (Leuciscus idus melanotus) LLC50(48h) 189	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	MSDS Attached
				mg/L (Leuciscus melanotus) LC50(24h) 145 mg/L (Poecilia reticulate) LC50(96h) 125 mg/L (Gambusia affinis) LOEL(150 d) = 25 mg/L (Lebistes reticulatus) Toxicity to Invertebrates EC50 (48h) 40.4 mg/L (Ceriodaphnia sp.) Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 4 (≤2%)	
Sodium Fluorescein Powder	Halliburton	Tracer	0.000977%	Oral LD50: 2500 mg/kg (Rabbit) Fish Toxicity LC50 (96h) 1372 mg/L (Oncorhynchus mykiss) Fish Toxicity LC50 (96h) 997 mg/L (Psetta maxima) Invertebrates LC50 (48h) 337 mg/L (Daphnia Pulex) Readily biodegradable (100% @ 20d) Log Kow = -0.67 (estimated)	Yes
Total Fluid			**100.0%**		

C. Chemical List

Chemical Name	CAS Number	Mass %
Customer Supplied Mix Water	Not Applicable	52.1%
Portland cement	65997-15-1	32.0%
Crystalline silica, quartz	14808-60-7	8.3%
Soda Lime Borosilicate Glass	65997-17-3	0.949%
Barium Sulfate	7727-43-7	0.928%
Silica, amorphous - fumed	7631-86-9	0.622%
Rape Oil	8002-13-9	0.333%
Sodium silicate	1344-09-8	0.319%
Alkenes, C15-C18	93762-80-2	0.225%
Humic acids, sodium salts, polymers with N,N-dimethyl-2-propenamide, sodium 2-methyl-2-[(1-oxo-2-propen-1-yl)amino]-1-propanesulfonate (1:1) and 2-propenenitrile, sodium bisulfite-terminated	473268-27-8	0.215%
Sulfonated organic polymer	526203-62-3	0.169%
Acrylic acid polymer with sodium AMPS, sodium salt	37350-42-8	0.150%
Sodium Lignosulfonate	8061-51-6	0.148%

Chemical Name	CAS Number	Mass %
Polypropylene glycol	25322-69-4	0.112%
Bentonite	1302-78-9	0.104%
Styrene / 1,3 Butadiene copolymer	9003-55-8	0.0977%
N,N-dimethylacrylamide copolymer with calcium AMPS	103115-52-2	0.0615%
Magnesium oxide	1309-48-4	0.0586%
Poly(vinyl acetate)-poly(vinyl alcohol) polymer	25213-24-5	0.0459%
2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene	25085-39-6	0.0420%
Calcium sulfate dihydrate	10101-41-4	0.0419%
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	0.0412%
Tartaric acid	87-69-4	0.0391%
Silica, amorphous precipitated	67762-90-7	0.0375%
Sepiolite	63800-37-3	0.0329%
Synthetic Crystalline-Free Silica Gel (Flow Agent)	112926-00-8	0.0294%
Xanthan gum	11138-66-2	0.0195%
Monopropylene glycol monooleate	1330-80-9	0.0189%
3, 3'-Methylene bis (5-methyl oxazolidine)	66204-44-2	0.0172%
Paraffin based petroleum oil	8012-95-1	0.0140%
Isopropanol	67-63-0	0.0137%
Calcium carbonate	471-34-1	0.0107%
Dilutan Gum	125005-87-0	0.0104%
Calcium aluminate	12042-68-1	0.0102%
Hydroxylpropyl guar	39421-75-5	0.00954%
Calcined Petroleum coke	64743-05-1	0.00745%
Calcium hydroxide	1305-62-0	0.00733%
Sodium hydroxide	1310-73-2	0.00726%
Welan gum	72121-88-1	0.00586%
Diatomaceous earth	61790-53-2	0.00489%
Aluminum	7429-90-5	0.00467%
Preparation of decorative laminate (paper, melamine & phenolic resins) which has been ground into particles.	Material is an Article	0.00445%
Glutaraldehyde	111-30-8	0.00416%

Chemical Name	CAS Number	Mass %
Sorbitan, monopalmitate	26266-57-9	0.00379%
Aluminium stearate	637-12-7	0.00379%
Alcohols, C6-10, ethoxylated	70879-83-3	0.00344%
Humic acids, potassium salts, polymers with acrylamide, 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid, 4-(1-oxo-2-propenyl) morpholine and sodium 4-ethenylbenzenesulfonate, sodium salts	227951-37-3	0.00342%
Crystalline silica, cristobalite	14464-46-1	0.00244%
Sodium sulfate	7757-82-6	0.00147%
Lecithins	8002-43-5	0.00147%
Crystalline silica, tridymite	15468-32-3	0.00147%
Citric acid	77-92-9	0.00147%
Sodium Fluorescein	518-47-8	0.000977%
Polyoxyethylene sorbitan trioleate	9005-70-3	0.000826%
Sodium bicarbonate	144-55-8	0.000703%
Sulfurous acid, monosodium salt, polymer with formaldehyde and acetone	40104-76-5	0.000558%
Sodium dicyclohexyl sulfosuccinate	23386-52-9	0.000469%
Carbon	7440-44-0	0.000385%
2-Bromo-2-(bromomethyl)pentanedinitrile	35691-65-7	0.000378%
FD&C Blue 1	3844-45-9	0.000378%
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl) dimethyl,salts with bentonite	68953-58-2	0.000354%
Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	0.000140%
Silane, dichlorodimethyl-, reaction products with silica	68611-44-9	0.0000489%
Sorbitan, tri,(9Z)-9-octadecenoate	26266-58-0	0.0000436%
Methanol	67-56-1	0.0000433%
Ethylenediaminetetraacetic acid, tetrasodium salt	64-02-8	0.0000293%
1,2-Benzisothiazolin-3-one	2634-33-5	<0.00001%
2-Methyl-4-isothiazolin-3-one	2682-20-4	<0.00001%
5-Chloro-2-methyl-3(2H)-isothiazolone mixture with 2-methyl-3(2H)-isothiazolone	55965-84-9	<0.00001%
Glyoxal	107-22-2	<0.00001%
Total		**~100%**

HALLIBURTON

SAFETY DATA SHEET

ALDACIDE® G ANTIMICROBIAL

Revision Date: 06-Apr-2021 **Revision Number:** 11

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name ALDACIDE® G ANTIMICROBIAL

Other means of Identification

Synonyms None

Hazardous Material Number: HB003462

Recommended use of the chemical and restrictions on use

Recommended Use Biocide

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Acute Oral Toxicity	Category 4 - H302
Acute inhalation toxicity - vapor	Category 3 - H331
Skin Corrosion/Irritation	Category 1 - H314
Serious Eye Damage/Irritation	Category 1 - H318
Respiratory Sensitization	Category 1 - H334
Skin Sensitization	Category 1 - H317
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Acute Aquatic Toxicity	Category 1 - H400

Chronic Aquatic Toxicity	Category 3 - H412

Label elements, including precautionary statements

Hazard Pictograms



Signal Word DANGER

Hazard Statements:
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P281 - Use personal protective equipment as required
P285 - In case of inadequate ventilation wear respiratory protection

Response
P301+ P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P391 - Collect spillage

Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains Substances	**CAS Number**
Glutaraldehyde	111-30-8

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Glutaraldehyde	111-30-8	10 - 30%	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Skin Corr. 1B (H314) Eye Corr. 1 (H318) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

Special exposure hazards in a fire

Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Ensure adequate ventilation. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Evacuate all persons from the area. Use only competent persons for cleanup.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Use appropriate protective equipment. Ensure adequate ventilation. Avoid breathing vapors. Avoid breathing mist. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from acids. Store away from alkalis. Store in a well ventilated area. Keep container closed when not in use. Store locked up. Product has a shelf life of 36 months.

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Glutaraldehyde	111-30-8	Not applicable	Ceiling: 0.05 ppm

Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation. If vapors are strong enough to be irritating to the nose or eyes, the TLV is probably being exceeded and special ventilation or respiratory protection maybe required.

Personal protective equipment (PPE)

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

Hand Protection Impervious gloves Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls Do not allow material to contaminate ground water system.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Clear light yellow
Odor:	Sharp	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	3.1-4.5
Freezing Point / Range	(-5) - (-10) °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	100.5 °C / 213 °F
Flash Point	No data available
Evaporation rate	0.9
Vapor Pressure	0.2 mmHg
Vapor Density	0.8
Specific Gravity	1.064
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	-0.333
Autoignition Temperature	> 275 °C / > 527 °F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

Keep away from heat, sparks and flame.

10.5. Incompatible materials

Strong acids. Strong alkalis.

10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation; Ingestion.

Symptoms related to exposure

Most Important Symptoms/Effects

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glutaraldehyde	111-30-8	50 mg/kg (Guinea Pig)	560 µL/kg (Rabbit)	0.28-0.5 mg/L (Rat) 4h

Immediate, delayed and chronic health effects from exposure

Inhalation Toxic if inhaled. Causes severe respiratory irritation. May cause allergic respiratory reaction. Inhalation of vapors may result in skin sensitization.

Eye Contact Causes severe eye irritation which may damage tissue.

Skin Contact Causes severe burns. May cause an allergic skin reaction.

Ingestion Harmful if swallowed. Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
Skin disorders. Lung disorders. Liver disorders.

Data limitations
No data available

Substances	CAS Number	Skin corrosion/irritation
Glutaraldehyde	111-30-8	Causes severe skin irritation with tissue destruction. (Rabbit)

Substances	CAS Number	Serious eye damage/irritation
Glutaraldehyde	111-30-8	Causes severe eye irritation which may damage tissue. (Rabbit)

Substances	CAS Number	Skin Sensitization
Glutaraldehyde	111-30-8	Skin sensitizer in guinea pig.

Substances	CAS Number	Respiratory Sensitization
Glutaraldehyde	111-30-8	May cause sensitization by inhalation

Substances	CAS Number	Mutagenic Effects
Glutaraldehyde	111-30-8	In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Glutaraldehyde	111-30-8	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Glutaraldehyde	111-30-8	Not a confirmed teratogen or embryotoxin.

Substances	CAS Number	STOT - single exposure
Glutaraldehyde	111-30-8	No information available

Substances	CAS Number	STOT - repeated exposure
Glutaraldehyde	111-30-8	May cause disorder and damage to the Kidney

Substances	CAS Number	Aspiration hazard
Glutaraldehyde	111-30-8	Not applicable

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Glutaraldehyde	111-30-8	EC50(72h): 0.61 mg/L (Desmodesmus subspicatus) EC50(72h): 0.5 mg/L (Skeletonema costatum)	LC50(96h): 10 mg/L (Lepomis macrochirus) NOEC(97d): 1.6 mg/L (Oncorhynchus mykiss) LC50(96h): 3.5 mg/L (Oncorhynchus mykiss)	EC50 (17h) 6.65 mg/L (Pseudomonas putida)	EC50(48h): 0.35 mg/L (Daphnia magna) EC50(48h): 0.7 mg/L (Acartia tonsa) NOEC(21d): 0.13 mg/L (Daphnia magna)

			LC50(96h): 60 mg/L (Scophthalmus maximus)		EC50(48h): 0.1 mg/L (Acartia tonsa)

12.2. Persistence and degradability

Readily biodegradable

Substances	CAS Number	Persistence and Degradability
Glutaraldehyde	111-30-8	Readily biodegradable (75% @ 28d)

12.3. Bioaccumulative potential

Does not bioaccumulate.

Substances	CAS Number	Bioaccumulation
Glutaraldehyde	111-30-8	-0.36

12.4. Mobility in soil

Substances	CAS Number	Mobility
Glutaraldehyde	111-30-8	Potential for mobility in soil is high (Koc between 50 and 150). Given its very low Henry'sconstant (3.3E-08 atm*m3/mole; 25 °C Measured), volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number UN3265
UN proper shipping name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Marine Pollutant

IMDG/IMO

UN Number UN3265
UN proper shipping name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Marine Pollutant
EMS: EmS F-A, S-B

IATA/ICAO

UN Number UN3265
UN proper shipping name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Marine Pollutant

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Special precautions during transport
None

HazChem Code
2X

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
S6

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 06-Apr-2021

Revision Note
SDS sections updated:
2
3
4
11
14

Full text of H-Statements referred to under sections 2 and 3
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

Additional information For additional information on the use of this product, contact your local Halliburton

representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/
NZ CCID

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

BARAZAN® D PLUS

Revision date: 31-Mar-2025 **Revision Number:** 34

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name BARAZAN® D PLUS

Product Code(s) HM003535

Other means of identification

Pure substance/mixture Mixture

Molecular weight 1000000

Recommended use of the chemical and restrictions on use

Recommended use Viscosifier
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

General hygiene considerations If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Working area parameters, subject to mandatory control (MAC or TSEL)

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection	Normal work coveralls.
Hand protection	Normal work gloves.
Respiratory protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (N95, P2/P3).
Environmental exposure controls	No information available.
Other protective equipment	Eyewash fountains and safety showers must be easily accessible.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White to off white
Odour	Slight.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	7	(1% in H2O)
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.6	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	203.9 °C / 399 °F	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Molecular weight	1000000	
Pour Point	No data available	
VOC content	No information available	
Bulk density	52.4 lbs/ft3	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity	No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

Section 12: Ecological information

Ecotoxicity	Based on available data, the classification criteria are not met

Aquatic ecotoxicity

Terrestrial ecotoxicity	There is no data for this product.
Persistence and degradability	Based on available data, the classification criteria are not met
Bioaccumulation	There is no data for this product.
Mobility	Based on available data, the classification criteria are not met
Other adverse effects	No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG	Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 31-Mar-2025

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

BARAZAN® D

Revision date: 19-Dec-2023 **Revision Number:** 23

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name BARAZAN® D

Product Code(s) HM003534

Other means of identification

Pure substance/mixture Mixture

Molecular weight 1000000

Recommended use of the chemical and restrictions on use

Recommended use Viscosifier
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure.

Skin and body protection Normal work coveralls.

Hand protection Normal work gloves.

Respiratory protection Not normally needed. But if significant exposures are possible then the following respirator

is recommended:
Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment None known.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White to off white
Odour	Slight.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	7 (1%)	None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.6	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	204 °C / 399.2 °F	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Molecular weight	1000000	
VOC content	No information available	
Bulk density	52.4 lbs/ft3	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitisation No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability No information available

Bioaccumulation No information available.

Mobility No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 19-Dec-2023

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final

determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

3.2. Mixtures

Product Service Line (PSL)	Baroid
Principle Route of Exposure	Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation
Hazard Pictograms	
Precautionary statements	

PSL Logo

HALLIBURTON

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Baroid

Transport information

Shipping classification for non-DG	Not restricted
HS Code	3913.90.2015
ECCN	EAR99

Contains

NFPA	**Health hazards**	0	**Flammability**	0	**Instability**	0	**Special hazards**	-
HMIS	**Health hazards**	0	**Flammability**	0	**Physical hazards**	0	**Personal protection**	X

NFPA Ratings: Health 0, Flammability 1, Reactivity 0

NFPA Label



Small label special phrases: See SDS for details

Batch No. [reference number]

SAP Part Number(s):

Net/Gross Package Weight:

Product identifier

Product Name BARAZAN® D

HALLIBURTON

SAFETY DATA SHEET

BARITE

Revision Date:: 03-May-2024 **Revision Number:** 54

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name BARITE

Product Code(s) HM000105

Other means of identification

Pure substance/mixture Substance

Molecular weight 233.4

Recommended use of the chemical and restrictions on use

Recommended use Weight Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Carcinogenicity	Category 1A
Specific target organ toxicity — repeated exposure	Category 2

Label elements



Signal word
DANGER

Hazard statements
May cause cancer.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.
Do not breathe dust/fume/gas/mist/vapours/spray.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Crystalline silica, quartz	14808-60-7	1 - 5%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media. Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation.

General hygiene considerations If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an

industrial hygienist or other qualified professional based on the specific application of this product. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a well ventilated area. Keep container closed when not in use. Store locked up. Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

Incompatible materials None known.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m³ (vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear suitable protective clothing.

Hand protection Normal work gloves. Wear suitable gloves.

Respiratory protection Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	Pink to tan to gray
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	.	Solid
Initial boiling point and boiling range		Solid
Flash point	.	Solid
Evaporation rate	No data available	
Flammability	No data available	Solid
Flammability Limit in Air		Solid
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	Solid
Relative vapour density	No data available	
Relative density	4.23 (g/cm3)	
Water solubility	Insoluble in water	
Solubility(ies)	Insoluble in water	
Partition coefficient	No data available	
Autoignition temperature	.	Solid
Decomposition temperature		
Kinematic viscosity	Not applicable	Solid
Dynamic viscosity	Not applicable	Solid
Other information		
Molecular weight	233.4	
VOC content	No information available	
Bulk density	< 2640 (kg/m^3)	
Particle characteristics	No information available	
Particle Size	< 0.1 mm	
Particle Size Distribution	1 - 100 µm	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous decomposition products

Hazardous decomposition products Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Crystalline silica, quartz	> 15000 mg/kg (human)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Chemical name	Skin corrosion/irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the skin

Serious eye damage/eye irritation

Chemical name	Serious eye damage/eye irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the eye

Respiratory or skin sensitisation

Chemical name	Respiratory sensitisation

Crystalline silica, quartz 14808-60-7	Not classified
Chemical name	Skin sensitisation
Crystalline silica, quartz 14808-60-7	Not classified

Germ cell mutagenicity

Chemical name	Germ cell mutagenicity
Crystalline silica, quartz 14808-60-7	Not regarded as mutagenic.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

Chemical name	Carcinogenicity
Crystalline silica, quartz 14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Crystalline silica, quartz - 14808-60-7	Carc. 1A	-	Group 1

Legend

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans

Reproductive toxicity

Chemical name	Reproductive toxicity
Crystalline silica, quartz 14808-60-7	This product does not contain any known or suspected reproductive hazards

STOT - single exposure

Chemical name	STOT - single exposure
Crystalline silica, quartz 14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Chemical name	STOT - repeated exposure
Crystalline silica, quartz 14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Aspiration hazard

Chemical name	Aspiration hazard
Crystalline silica, quartz 14808-60-7	Based on available data, the classification criteria are not met

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Crystalline silica, quartz	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	-	LL50(24 h)>10000 mg/L (Daphnia magna)

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Crystalline silica, quartz 14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation

Mobility

Chemical name	Mobility
Crystalline silica, quartz 14808-60-7	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 6

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Crystalline silica, quartz - 14808-60-7
Contact supplier for inventory compliance status	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision Date: 03-May-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

BENTONITE

Revision date: 07-Aug-2024 **Revision Number:** 52

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name BENTONITE

Product Code(s) HM000126

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Viscosifier
Weight Additive

Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Carcinogenicity	Category 1A
Specific target organ toxicity — repeated exposure	Category 2

Label elements



Signal word
DANGER

Hazard statements
May cause cancer.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.
Do not breathe dust/fume/gas/mist/vapours/spray.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Crystalline silica, quartz	14808-60-7	1 - 5%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice IF exposed or concerned: Get medical advice/attention.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure May cause cancer. May cause damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media. Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing.

General hygiene considerations If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. Do not eat, drink or smoke when using this product. Wash hands before breaks

and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

Incompatible materials Hydrofluoric acid.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m³	TWA: 0.025 mg/m³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m³ (vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear suitable protective clothing.

Hand protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace. Wear suitable gloves.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	Various
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	9.9	None known
Melting point / freezing point	.	Solid
Initial boiling point and boiling range		Solid
Flash point	.	Solid
Evaporation rate	No data available	
Flammability	No data available	Solid
Flammability Limit in Air		Solid
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	Solid
Relative vapour density	No data available	
Relative density	2.65 (g/cm3)	
Water solubility	Insoluble in water	
Solubility(ies)	Insoluble in water	
Partition coefficient	No data available	
Autoignition temperature	.	Solid
Decomposition temperature		
Kinematic viscosity	Not applicable	Solid
Dynamic viscosity	Not applicable	Solid
Other information		
Pour Point	No data available	
VOC content	No information available	
Bulk density	< 1300 (kg/m^3)	
Particle characteristics	No information available	
Particle Size	>= 95% < 125 µm	
Particle Size Distribution	>= 95% < 125 µm	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Hydrofluoric acid.

Hazardous decomposition products

Hazardous decomposition products Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Crystalline silica, quartz	> 15000 mg/kg (human)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Chemical name	Skin corrosion/irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the skin

Serious eye damage/eye irritation

Chemical name	Serious eye damage/eye irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the eye

Respiratory or skin sensitisation

Chemical name	Respiratory sensitisation
Crystalline silica, quartz 14808-60-7	Not classified
Chemical name	Skin sensitisation
Crystalline silica, quartz 14808-60-7	Not classified

Germ cell mutagenicity

Chemical name	Germ cell mutagenicity
Crystalline silica, quartz 14808-60-7	Not regarded as mutagenic.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

Chemical name	Carcinogenicity
Crystalline silica, quartz 14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Crystalline silica, quartz - 14808-60-7	Carc. 1A	-	Group 1

Legend

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans

Reproductive toxicity

Chemical name	Reproductive toxicity
Crystalline silica, quartz 14808-60-7	This product does not contain any known or suspected reproductive hazards

STOT - single exposure

Chemical name	STOT - single exposure
Crystalline silica, quartz 14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Chemical name	STOT - repeated exposure
Crystalline silica, quartz 14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Aspiration hazard

Chemical name	Aspiration hazard
Crystalline silica, quartz 14808-60-7	Based on available data, the classification criteria are not met

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Crystalline silica, quartz	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	-	LL50(24 h)>10000 mg/L (Daphnia magna)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Crystalline silica, quartz 14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation

Mobility

Chemical name	Mobility
Crystalline silica, quartz 14808-60-7	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Crystalline silica, quartz - 14808-60-7
Contact supplier for inventory compliance status	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 07-Aug-2024

Reason for revision Update to Format SDS sections updated: 2

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

BridgeMaker II LCM

Revision date: 10-Jan-2024 **Revision Number:** 20

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name BridgeMaker II LCM

Product Code(s) HM008048

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Lost Circulation Material
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
General hygiene considerations	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store away from oxidizers. Store in a dry location. Keep from heat, sparks, and open flames. Store away from alkalis. Product has a shelf life of 60 months.
Incompatible materials	Strong acids. Strong alkalis.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls	A well ventilated area to control dust levels.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses or goggles to protect against exposure. (EN-166).
Skin and body protection	Normal work coveralls.

Hand protection	Normal work gloves.
Respiratory protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (N95, P2/P3).
Environmental exposure controls	No information available.
Other protective equipment	Eyewash fountains and safety showers must be easily accessible.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Color	Variable Beige Black White Gray
Odor	Odorless.
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range	4200 °C / 7592 °F	
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	
Relative vapor density	No data available	
Relative density	1.85	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity	No information available.

Chemical stability

Stability	Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong acids. Strong alkalis.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapor)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity	0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.
Terrestrial ecotoxicty	There is no data for this product.
Persistence and degradability	No information available
Bioaccumulation	No information available.
Mobility	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG	Not regulated
IATA	Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 10-Jan-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be

validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

CEMENT - CLASS G

Revision Date: 03-Aug-2023 **Revision Number:** 59

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name CEMENT - CLASS G

Other means of Identification

Synonyms None

Hazardous Material Number: HM001839

Recommended use of the chemical and restrictions on use

Recommended Use Cement

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Skin Corrosion/Irritation	Category 2 - H315
Serious Eye Damage/Irritation	Category 1 - H318
Skin Sensitization	Category 1 - H317
Carcinogenicity	Category 1A - H350
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373

Label elements, including precautionary statements

Hazard Pictograms



Signal Word DANGER

Hazard Statements:
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer by inhalation
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/eye protection/face protection
P281 - Use personal protective equipment as required

Response
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	**CAS Number**
Portland cement	65997-15-1
Crystalline silica, quartz	14808-60-7

Other hazards which do not result in classification
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification -

			Australia
Portland cement	65997-15-1	60 - 100%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Skin Sens. 1 (H317) STOT SE 3 (H335)
Crystalline silica, quartz	14808-60-7	1 - 5%	Carc. 1A (H350) STOT RE 1 (H372)

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

Ingestion Under normal conditions, first aid procedures are not required.

Symptoms caused by exposure

Causes skin irritation. May cause allergic skin reaction. Causes severe eye irritation which may damage tissue. May cause respiratory irritation. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media

None - does not burn.

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

Special exposure hazards in a fire

Not applicable

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Avoid contact with eyes, skin, or clothing. This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet. Wash hands after use. Launder contaminated clothing before reuse.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store in a cool well ventilated area. Keep container closed when not in use. Store locked up. Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 24 months.

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Portland cement	65997-15-1	TWA: 10 mg/m^3	TWA: 1 mg/m^3
Crystalline silica, quartz	14808-60-7	TWA: 0.05 mg/m^3	TWA: 0.025 mg/m^3

Appropriate engineering controls

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits. A well ventilated area to control dust levels. Personal protective equipment must be CE marked and should be selected in collaboration with the supplier of such equipment.
The recommended protective equipment and the specified standards are indicative. Standards should be of the latest version.
Risk assessment of the actual workplace / operation (actual risk) may result in other protective measures.
The suitability and durability of the protective equipment will depend on the application.

Personal protective equipment (PPE)

Personal Protective Equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.
Dust/mist respirator. (N95, P2/P3)

Hand Protection

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Impervious rubber gloves. Nitrile gloves.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure. Dust proof goggles. (EN-166)

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls

Do not allow material to contaminate ground water system. Avoid dust formation Prevent product from entering drains. Avoid subsoil penetration

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Solid	**Color**	Gray
Odor:	Odorless	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	12.4
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	3.14
Water Solubility	No data available
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

Keep away from any contact with water.

10.5. Incompatible materials

Hydrofluoric acid.

10.6. Hazardous decomposition products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

11. Toxicological Information

Information on routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure

Most Important Symptoms/Effects

Causes skin irritation. May cause allergic skin reaction. Causes severe eye irritation which may damage tissue. May cause respiratory irritation. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Portland cement	65997-15-1	No data available	No data available	No data available
Crystalline silica, quartz	14808-60-7	No data available	No data available	No data available

Immediate, delayed and chronic health effects from exposure

Inhalation

Causes moderate respiratory irritation. Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact

Causes severe eye irritation which may damage tissue.

Skin Contact

Causes skin irritation. May cause alkali burns with confined contact. May cause an allergic skin reaction. Can dry skin.

Ingestion

Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

Exposure Levels

No data available

Interactive effects

Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

Data limitations

No data available

Substances	CAS Number	Skin corrosion/irritation
Portland cement	65997-15-1	Irritating to skin. (Rabbit)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Serious eye damage/irritation
Portland cement	65997-15-1	Corrosive to eyes
Crystalline silica, quartz	14808-60-7	Non-irritating to the eye No information available

Substances	CAS Number	Skin Sensitization
Portland cement	65997-15-1	May cause sensitization by skin contact
Crystalline silica, quartz	14808-60-7	No information available.

Substances	CAS Number	Respiratory Sensitization

Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	Mutagenic Effects
Portland cement	65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Portland cement	65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

Substances	CAS Number	Reproductive toxicity
Portland cement	65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	STOT - single exposure
Portland cement	65997-15-1	May cause respiratory irritation.
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Portland cement	65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Portland cement	65997-15-1	Not applicable
Crystalline silica, quartz	14808-60-7	No information available

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Portland cement	65997-15-1	No information available	No information available	No information available	No information available
Crystalline silica, quartz	14808-60-7	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	No information available	LL50(24 h)>10000 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Portland cement	65997-15-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

Other adverse effects

Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods
Bury in a licensed landfill according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Disposal of any contaminated packaging
Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Environmental regulations
Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Special precautions during transport
None

HazChem Code
None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.

US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 03-Aug-2023

Revision Note
Update to Format
SDS sections updated:
16

Full text of H-Statements referred to under sections 2 and 3
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

GASSTOP ADDITIVE

Revision Date: 03-Aug-2023 **Revision Number:** 42

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name GASSTOP ADDITIVE

Other means of Identification

Synonyms None

Hazardous Material Number: HM000755

Recommended use of the chemical and restrictions on use

Recommended Use Cement Additive

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA

Other hazards which do not result in classification
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Rinse mouth with water many times. Get medical attention, if symptoms occur

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
All standard fire fighting media. Use an extinguishing agent suitable for the surrounding fire.
Extinguishing media which must not be used for safety reasons
Water spray jet

Specific hazards arising from the chemical
Special exposure hazards in a fire
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling
Handling Precautions
Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use.
Other Guidelines
No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring
Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	Not applicable	Not applicable

Appropriate engineering controls
Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)
Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
Hand Protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.
Skin Protection Wear protective clothing appropriate for the work environment.
Eye Protection Wear safety glasses or goggles to protect against exposure. (EN-166)
Other Precautions Eyewash fountains and safety showers must be easily accessible.
Environmental Exposure Controls Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Solid	**Color**	White to off white
Odor:	Odorless	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	7-8
Freezing Point / Range	-8 °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	>93.3°C / >200°F
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.37
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

Molecular Weight	> 600
VOC Content (%)	< 5%

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong oxidizers.
10.6. Hazardous decomposition products
Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure
Most Important Symptoms/Effects
No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Contains no hazardous	NA	No data available	No data available	No data available

substances in concentrations above cut-off values according to the competent authority				

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.
Eye Contact May cause mechanical irritation to eye.
Skin Contact Not irritating to skin in rabbits.
Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
None known.

Data limitations
No data available

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Dispose in accordance with local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport

None

HazChem Code

None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 03-Aug-2023

Revision Note
Update to Format

Full text of H-Statements referred to under sections 2 and 3
None

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

STARCIDE®

Revision date: 26-Jan-2024 **Revision Number:** 8

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name STARCIDE®

Product Code(s) HB003388

Other means of identification

Pure substance/mixture Mixture

Molecular weight 186.25

Recommended use of the chemical and restrictions on use

Recommended use Bactericide
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

GHS Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Gases)	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2

Chronic aquatic toxicity	Category 2

Label elements



Signal word
DANGER

Hazard statements
Harmful if swallowed.
Toxic in contact with skin.
Toxic if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.
Corrosive to the respiratory tract

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/fume/gas/mist/vapors/spray.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of water and soap.
Call a POISON CENTER or doctor if you feel unwell.
Take off immediately all contaminated clothing and wash it before reuse.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor.
Immediately call a POISON CENTER or doctor.
Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Collect spillage.
Precautionary Statements - Storage
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification

Toxic to aquatic life.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
3, 3'-Methylene bis (5-methyl oxazolidine)	66204-44-2	60 - 100%

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention. Immediate medical attention is required.

Eye contact Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact Get immediate medical attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Itching. Rashes. Hives. Coughing and/ or wheezing. Difficulty in breathing.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by skin contact. Formaldehyde. Oxides of nitrogen. Oxides of sulfur.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
Hazchem code	2X

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Attention! Corrosive material. Keep people away from and upwind of spill/leak. Do not breathe vapor or mist.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Do not breathe vapor or mist.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Do not breathe vapor or mist.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store in original container. Store away from oxidizers. Store away from acids. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 12 months. Keep Away From Food

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Protect from moisture. Store away from other materials.

Incompatible materials Strong oxidizers. Strong acids. Reducing agents. Acids. Bases. Oxidizing agent.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles; also wear a face shield if splashing hazard exists. (EN-166). Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact. Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Hand protection Chemical-resistant protective gloves (EN 374). Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):. Nitrile gloves. Butyl rubber gloves. (>= 8 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. Wear suitable gloves. Impervious gloves.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	Colorless to slight yellow

Odor	Sweet amine.
Odor threshold	No information available

Property	Values	Remarks • Method
pH	10 (0.15%)	None known
Melting point / freezing point	< -35 °C / -31 °F	
Initial boiling point and boiling range	204 °C / 399.2 °F	
Flash point	> 100 °C / 212 °F	(PMCC)
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	0.014 hPa	
Relative vapor density	No data available	
Relative density	1.049 - 1.069	
Water solubility	Soluble in water	
Solubility(ies)	benzene heptane	
Partition coefficient	1.89	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	&21	
Other information		
Pour Point	< -39	
Molecular weight	186.25	
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

Incompatible materials

Incompatible materials Strong oxidizers. Strong acids. Reducing agents. Acids. Bases. Oxidizing agent.

Hazardous decomposition products

Hazardous decomposition products Formaldehyde. Oxides of nitrogen. Oxides of sulfur.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Toxic by inhalation.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Toxic in contact with skin.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives. Difficulty in breathing.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	321.40 mg/kg
ATEmix (dermal)	300.00 mg/kg
ATEmix (inhalation-gas)	2,250.00 ppm
ATEmix (inhalation-vapor)	5.50 mg/l
ATEmix (inhalation-dust/mist)	0.857 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
3, 3'-Methylene bis (5-methyl oxazolidine)	630 mg/kg (Rat)	760 mg/kg (Rat)	2 mg/L (Rat, 4 hr, aerosol)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes severe skin burns and eye damage.

Chemical name	Skin corrosion/irritation
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Causes severe irritation and or burns (Rabbit)

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye damage. Causes burns.

Chemical name	Serious eye damage/eye irritation
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Causes severe irritation and or burns (Rabbit)

Respiratory or skin sensitization May cause an allergic skin reaction.

Chemical name	Respiratory sensitization
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	No information available

Chemical name	Skin sensitization
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	May cause sensitization by skin contact (guinea pig)

Germ cell mutagenicity Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.

Chemical name	Germ cell mutagenicity
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

Chemical name	Carcinogenicity
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Did not show carcinogenic effects in animal experiments

Reproductive toxicity No information available.

Chemical name	Reproductive toxicity
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

STOT - single exposure No information available.

Chemical name	STOT - single exposure
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Chemical name	STOT - repeated exposure
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Causes damage to organs through prolonged or repeated exposure: Gastrointestinal tract (GI) Respiratory system

Aspiration hazard No information available.

Chemical name	Aspiration hazard

3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Not applicable

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
3, 3'-Methylene bis (5-methyl oxazolidine)	EC50(72 h)=5.7 mg/L (Desmodesmus subspicatus) EC50()=3.35 mg/L (Skeletonema costatum)	LC50(96 h)=135.21 mg/L (Scophthalmus maximus)	EC50: 44 mg/L (activated sludge)	EC50(48 h)=37.9 mg/L (Daphnia magna) EC50(48 h)=4.1 mg/L (Acartia tonsa) NOEC(21 d)=1.3 mg/L (Daphnia magna)

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	Readily biodegradable (69.4% @ 28d)

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
3, 3'-Methylene bis (5-methyl oxazolidine) 66204-44-2	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG

UN number or ID number UN2735
UN proper shipping name Amines, liquid, corrosive, n.o.s.

Transport hazard class(es)	8
Packing group	III
Special Provisions	223, 274
Description	UN2735, Amines, liquid, corrosive, n.o.s. (3, 3'-Methylene bis (5-methyl oxazolidine)), 8, III
Limited quantity (LQ)	5 L
Hazchem code	2X

IATA

UN number or ID number	UN2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s.
Transport hazard class(es)	8
Packing group	III
ERG Code	8L
Special Provisions	A3, A803
Description	UN2735, Amines, liquid, corrosive, n.o.s. (3, 3'-Methylene bis (5-methyl oxazolidine)), 8, III

IMDG Not regulated

UN number or ID number	UN2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s.
Transport hazard class(es)	8
Packing group	III
EmS-No.	F-A, S-B
Special Provisions	223, 274
Description	UN2735, Amines, liquid, corrosive, n.o.s.(3, 3'-Methylene bis (5-methyl oxazolidine)), 8, III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	3, 3'-Methylene bis (5-methyl oxazolidine) - 66204-44-2
Present	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 26-Jan-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program

OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category
TWA – Time-Weighted Average
UN – United Nations
VOC – Volatile Organic Carbon
vPvB – very Persistent and very Bioaccumulative
VLA-ED - time-weighted average values for a whole work shift [Spain valores límite ambientales para la exposición diaria]
NDS - najwyisze dopuszczalne stkienie na stanowisku pracy
SZW - Netherlands Ministry of Social Affairs and Employment
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
AS/NZS 1715 - New Zeland Standard on Selection, use and maintenance of respiratory protective equipment
C - Celsius
EN 149 - European standard on filtering halfmasks to protect against particles
EN 374 - European standard on Protective gloves against chemicals and micro-organisms
FFP - Filtering Facepieces
h - hour
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NDS - OEL-TWA [Poland najwyisze dopuszczalne stkienie na stanowisku pracy]
R/H-phrases - Risk/Hazard-phrases
RID - The European Agreement concerning the International Carriage of Dangerous Goods by Rail
UK - United Kingdom
w/w - weight/weight
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
MAK - Maximum Workplace Concentration
d - day
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
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FFP - Filtering Facepieces
h - hour
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NDS - OEL-TWA [Poland najwyisze dopuszczalne stkienie na stanowisku pracy]
R/H-phrases - Risk/Hazard-phrases
RID - The European Agreement concerning the International Carriage of Dangerous Goods by Rail
UK - United Kingdom
w/w - weight/weight
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
MAK - Maximum Workplace Concentration
d - day

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

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End of Safety Data Sheet

Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

SECTION 1: Identification

1.1. Product identifier
3M™ Glass Bubbles HGS Series

Product Identification Numbers
WF-6009-0632-6

1.2. Recommended use and restrictions on use

Recommended use
Downhole Oil and Gas Applications, Industrial use.

For Industrial or Professional use only.

1.3. Supplier's details
Address: 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
Telephone: 136 136
E Mail: productinfo.au@mmm.com
Website: www.3m.com.au

1.4. Emergency telephone number
EMERGENCY: 1800 097 146 (Australia only)

SECTION 2: Hazard identification

This product is NOT classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture
Not applicable.

2.2. Label elements

Signal word
Not applicable.

Symbols
Not applicable.

Pictograms
Not applicable

Precautionary statements

Prevention:
P280E Wear protective gloves.

2.3. Other assigned/identified product hazards
None known.

2.4. Other hazards which do not result in classification
May be harmful if swallowed.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
Soda Lime Borosilicate Glass	65997-17-3	97 - 100

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye contact
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If swallowed
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
No critical symptoms or effects. See Section 11.1, information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

7.2. Conditions for safe storage including any incompatibilities
No special storage requirements.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Glass filaments	65997-17-3	Australia OELs	TWA(as fiber)(8 hours):0.5 fibers/ml;TWA(8 hours):0.5 fibers/ml	
Soda Lime Borosilicate Glass	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
Australia OELs : Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling
Sen: Sensitiser
Sk: Absorption through the skin may be a significant source of exposure.

8.2. Exposure controls

8.2.1. Engineering controls
Provide appropriate local exhaust ventilation at transfer points. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

Skin/hand protection
No chemical protective gloves are required.

Respiratory protection

Wear respiratory protection if ventilation is inadequate to prevent overexposure.
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for particulates.

For questions about suitability for a specific application, consult with your respirator manufacturer.
Select and use respirators according to AS/NZS 1715. Respirators should comply with AS/NZS 1716 performance specifications. For information about respirators, call 3M on 1800 024 464.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Fine Powder < 100 microns
Colour	White
Odour	Odourless
Odour threshold	*Not applicable.*
pH	*Not applicable.*
Melting point/Freezing point	*No data available.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	*Not applicable.*
Evaporation rate	*Not applicable.*
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*Not applicable.*
Vapor Density and/or Relative Vapor Density	*Not applicable.*
Density	0.1 - 0.6 g/cm3
Relative density	0.1 - 0.6 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*Not applicable.*

Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*Not applicable.*
Viscosity/Kinematic Viscosity	*Not applicable.*
Volatile organic compounds (VOC)	*Not applicable.*
Percent volatile	< 0.5 % weight
VOC less H2O & exempt solvents	*Not applicable.*
Molecular weight	*No data available.*
Softening point	>=600 ºC

Nanoparticles
This material does not contain nanoparticles.

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

10.2 Chemical stability
Stable.

10.3. Conditions to avoid
None known.

10.4. Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.5 Incompatible materials
None known.

10.6 Hazardous decomposition products

Substance	**Condition**
Oxides of sulphur.	If Breakage Occurs

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin contact
Mechanical skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Eye contact
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Ingestion
May be harmful if swallowed.
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE2,000 - 5,000 mg/kg
Soda Lime Borosilicate Glass	Dermal		LD50 estimated to be > 5,000 mg/kg
Soda Lime Borosilicate Glass	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Soda Lime Borosilicate Glass	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Soda Lime Borosilicate Glass	Professional judgement	No significant irritation

Skin Sensitisation
For the component/components, either no data are currently available or the data are not sufficient for classification.

Respiratory Sensitisation
For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Soda Lime Borosilicate Glass	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Soda Lime Borosilicate Glass	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects
For the component/components, either no data are currently available or the data are not sufficient for classification.

Target Organ(s)

Specific Target Organ Toxicity - single exposure
For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Soda Lime Borosilicate Glass	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Exposure Levels
Refer Section **8.1 Control Parameters** of this Safety Data Sheet.

Interactive Effects
Not determined.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
Soda Lime Borosilicate Glass	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Soda Lime Borosilicate Glass	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Soda Lime Borosilicate Glass	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Soda Lime Borosilicate Glass	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Soda Lime Borosilicate Glass	65997-17-3	Data not available-insufficient			N/A	

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Soda Lime Borosilicate Glass	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility.

SECTION 14: Transport Information

Australian Dangerous Goods Code (ADG) - Road/Rail Transport
UN No.: Not applicable.
Proper shipping name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

Hazchem Code: Not applicable
IERG: Not applicable.

International Air Transport Association (IATA) - Air Transport
UN No.: Not applicable.
Proper shipping name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

International Maritime Dangerous Goods Code (IMDG)- Marine Transport
UN No.: Not applicable.
Proper shipping name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.
Marine Pollutant: Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Inventory Status:

This product is defined as an article under the Industrial Chemicals (Notification and Assessment) Act 1989, as amended, and is exempt from inventory requirements under the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

Poison Schedule: This product is an article therefore the Standard for the Uniform Scheduling of Medicines and Poisons Schedule is not applicable.

SECTION 16: Other information

Revision information:
Complete document review.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Safety Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.
Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State regulations exemptions for some solvents.

3M Australia SDSs are available at www.3m.com.au

HALLIBURTON

SAFETY DATA SHEET

ECONOLITE LIQUID

Revision Date: 03-Dec-2020 **Revision Number:** 103

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name ECONOLITE LIQUID

Other means of Identification

Synonyms None

Hazardous Material Number: HM000478

Recommended use of the chemical and restrictions on use

Recommended Use Light Weight Cement Additive

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Skin Corrosion/Irritation	Category 2 - H315
Serious Eye Damage/Irritation	Category 1 - H318

Label elements, including precautionary statements

Hazard Pictograms



Signal Word DANGER

Hazard Statements:
H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary Statements

Prevention
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/eye protection/face protection

Response
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Storage None
Disposal None

Contains

Substances	**CAS Number**
Sodium silicate	1344-09-8

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Sodium silicate	1344-09-8	30 - 60%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318)

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure
Causes severe eye irritation which may damage tissue. Causes skin irritation.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

Special exposure hazards in a fire

Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove. Do NOT spread spilled product with water.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Avoid breathing vapors. Avoid breathing mist. Ensure adequate ventilation. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from acids. Store in a cool well ventilated area. Keep container closed when not in use.

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Sodium silicate	1344-09-8	Not applicable	Not applicable

Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment (PPE)

Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)
Hand Protection	Chemical-resistant protective gloves (EN 374) Nitrile gloves. Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): (>= 8 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.
Skin Protection	Full protective chemical resistant clothing.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.
Environmental Exposure Controls	Do not allow material to contaminate ground water system.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Clear to hazy
Odor:	Slightly soapy	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	11.2
Freezing Point / Range	-1 °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	101 °C / 214 °F
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.4
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong acids. Amphoteric metals such as aluminum, magnesium, lead, tin, or zinc.
10.6. Hazardous decomposition products
Hydrogen

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure
Most Important Symptoms/Effects
Causes severe eye irritation which may damage tissue. Causes skin irritation.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium silicate	1344-09-8	3400 mg/kg (Rat)	> 5000 mg/kg (Rat) (similar substance)	> 2.06 mg/L (Rat) 4h (similar substance)

Immediate, delayed and chronic health effects from exposure
Inhalation May cause respiratory irritation.
Eye Contact Causes severe eye irritation which may damage tissue.
Skin Contact Causes skin irritation.
Ingestion Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
Skin disorders.

Data limitations
No data available

Substances	CAS Number	Skin corrosion/irritation
Sodium silicate	1344-09-8	Causes moderate skin irritation. (Rabbit)

Substances	CAS Number	Serious eye damage/irritation
Sodium silicate	1344-09-8	Causes severe eye irritation which may damage tissue. (Rabbit)

Substances	CAS Number	Skin Sensitization
Sodium silicate	1344-09-8	Did not cause sensitization on laboratory animals (mouse) (similar substances)

Substances	CAS Number	Respiratory Sensitization
Sodium silicate	1344-09-8	No information available

Substances	CAS Number	Mutagenic Effects
Sodium silicate	1344-09-8	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Sodium silicate	1344-09-8	No information available

Substances	CAS Number	Reproductive toxicity
Sodium silicate	1344-09-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

Substances	CAS Number	STOT - single exposure
Sodium silicate	1344-09-8	No information available.

Substances	CAS Number	STOT - repeated exposure
Sodium silicate	1344-09-8	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Sodium silicate	1344-09-8	Not applicable

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Sodium silicate	1344-09-8	EC50 (72h) > 345 mg/L (growth rate) (Scenedesmus subspicatus) EC0 (72h) 35 mg/L (growth rate) (Scenedesmus subspicatus)	LC50 (96h) 1108 mg/L (Danio rerio) LC50 (96h) 260 – 310 mg/L (Oncorhynchus mykiss)	EC0 (0.5h) 3454 mg/L (Pseudomonas putida)	EC50 (48h) 1700 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sodium silicate	1344-09-8	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Sodium silicate	1344-09-8	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium silicate	1344-09-8	No information available

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport

None

HazChem Code

None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number

S5

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 03-Dec-2020

Revision Note
SDS sections updated:
2

Full text of H-Statements referred to under sections 2 and 3
H315 - Causes skin irritation
H318 - Causes serious eye damage

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID

Disclaimer Statement
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

GASCON 469

Revision date: 30-Apr-2025 **Revision Number:** 34

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name GASCON 469

Product Code(s) HM000753

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Cement Additive
Uses advised against No information available.

Illicit Drug Precursors/Reagents This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling, and storing these substances.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Chronic aquatic toxicity	Not classified chronic

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification
Causes mild skin irritation.
Harmful to aquatic life.

Section 3: Composition/information on ingredients

Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms Prolonged contact may cause redness and irritation.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

None known

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

General hygiene considerations If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool well ventilated area. Keep from excessive heat. Keep from freezing. Keep container closed when not in use. Store in non-rusting containers. Product has a shelf life of 12 months.

Incompatible materials Strong oxidizers. Strong acids.

Section 8: Exposure controls and personal protection

Working area parameters, subject to mandatory control (MAC or TSEL)

Exposure Limits

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles; also wear a face shield if splashing hazard exists. (EN-166). Wear safety

glasses with side shields (or goggles).

Skin and body protection Normal work coveralls. Wear suitable protective clothing.

Hand protection None known. Wear suitable gloves.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Transparent
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	10	
Melting point / freezing point	No data available	
Initial boiling point and boiling range	100 °C / 212 °F	
Flash point	No data available	
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.1	
Water solubility	Soluble in water (10g/100ml)	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	.?	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers. Strong acids.

Hazardous decomposition products

Hazardous decomposition products None known.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available. Causes mild skin irritation.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms Prolonged contact may cause redness and irritation.

Acute toxicity .

Numerical measures of toxicity - Product Information

Component Information
See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes mild skin irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

Section 12: Ecological information

Ecotoxicity	Based on available data, the classification criteria are not met
Aquatic ecotoxicity	Harmful to aquatic life.
Terrestrial ecotoxicity	There is no data for this product.
Persistence and degradability	Based on available data, the classification criteria are not met
Bioaccumulation	There is no data for this product.
Mobility	Based on available data, the classification criteria are not met
Other adverse effects	No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG	Not regulated
IATA	Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 10

Australian Industrial Chemicals Introduction Scheme (AICIS)

Illicit Drug Precursors/Reagents
This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling, and storing these substances.
Legend
Category 3 - Chemicals and apparatus that may be used in the illicit production of drugs. Purchases from this list should alert companies or organisations to seek further indicators of any suspicious orders or enquiries. No official reporting is required.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 30-Apr-2025

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

HALAD® 344 CEMENT ADDITIVE

Revision date: 07-Aug-2024 **Revision Number:** 46

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name HALAD® 344 CEMENT ADDITIVE

Product Code(s) HM000816

Other means of identification

Pure substance/mixture Mixture

Molecular weight > 600

Recommended use of the chemical and restrictions on use

Recommended use Fluid Loss Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Oxides of nitrogen. Carbon monoxide and carbon dioxide. Oxides of sulfur.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool, dry location. Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 60 months.

Incompatible materials None known.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area. Personal protective equipment must be CE marked and should be selected in collaboration with the supplier of such equipment.
The recommended protective equipment and the specified standards are indicative. Standards should be of the latest version.
Risk assessment of the actual workplace / operation (actual risk) may result in other protective measures.
The suitability and durability of the protective equipment will depend on the application.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses or goggles to protect against exposure. (EN-166).
Skin and body protection	Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear protective clothing impervious to the chemical substance, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact. Normal work coveralls.
Hand protection	Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):. Normal work gloves.
Respiratory protection	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).
Environmental exposure controls	No information available.
Other protective equipment	Eyewash fountains and safety showers must be easily accessible.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White to off white
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	-8 °C / 17.6 °F	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.22	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Molecular weight	> 600	
Pour Point	No data available	
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous decomposition products

Hazardous decomposition products Oxides of nitrogen. Carbon monoxide and carbon dioxide. Oxides of sulfur.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitisation	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity	0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.
Terrestrial ecotoxicity	There is no data for this product.

Persistence and degradability

Bioaccumulation	There is no data for this product.

Mobility

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG	Not regulated
IATA	Not regulated
IMDG	Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 07-Aug-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

HALAD® 413L CEMENT ADDITIVE

Revision Date: 29-Jun-2023 **Revision Number:** 38

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name HALAD® 413L CEMENT ADDITIVE

Other means of Identification

Synonyms None

Hazardous Material Number: HM000824

Recommended use of the chemical and restrictions on use

Recommended Use Fluid Loss Additive

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Under normal conditions, first aid procedures are not required.

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
All standard fire fighting media.
Extinguishing media which must not be used for safety reasons
None known.

Specific hazards arising from the chemical
Special exposure hazards in a fire
Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters
Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors.

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling
Handling Precautions
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store away from oxidizers. Product has a shelf life of 24 months.
Other Guidelines
No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring
Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	Not applicable	Not applicable

Appropriate engineering controls
Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)
Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (N95, P2/P3)
Hand Protection Normal work gloves.
Skin Protection Normal work coveralls.
Eye Protection Wear safety glasses or goggles to protect against exposure.
Other Precautions None known.
Environmental Exposure Controls Do not allow material to contaminate ground water system.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Brown-black
Odor:	Sweet	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	7.5
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.1
Water Solubility	Miscible with water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong oxidizers.
10.6. Hazardous decomposition products
Oxides of nitrogen. Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure
Most Important Symptoms/Effects
No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Contains no hazardous substances in concentrations above	NA	No data available	No data available	No data available

cut-off values according to the competent authority				

Immediate, delayed and chronic health effects from exposure

Inhalation None known.
Eye Contact None known.
Skin Contact None known.
Ingestion None known.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
None known.

Data limitations
No data available

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport

None

HazChem Code

None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.

New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 29-Jun-2023

Revision Note
Update to Format

Full text of H-Statements referred to under sections 2 and 3
None

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

HR-25L

Revision Date: 01-Feb-2021 **Revision Number:** 41

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name HR-25L

Other means of Identification

Synonyms None

Hazardous Material Number: HM000893

Recommended use of the chemical and restrictions on use

Recommended Use Cement Retarder

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Serious Eye Damage/Irritation	Category 1 - H318
Acute Aquatic Toxicity	Category 3 - H402

Label elements, including precautionary statements

Hazard Pictograms



Signal Word DANGER

Hazard Statements:
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

Precautionary Statements

Prevention
P273 - Avoid release to the environment
P280 - Wear eye protection/face protection

Response
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Storage None

Disposal P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	**CAS Number**
Tartaric acid	87-69-4

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Tartaric acid	87-69-4	30 - 60%	Eye Corr. 1 (H318) Aquatic Acute 3 (H402)

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure
Causes severe eye irritation which may damage tissue.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media
All standard fire fighting media
Extinguishing media which must not be used for safety reasons
None known.

Specific hazards arising from the chemical

Special exposure hazards in a fire
Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information
Store away from alkalis. Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 60 months.
Other Guidelines
No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Tartaric acid	87-69-4	Not applicable	Not applicable

Appropriate engineering controls

Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an

	industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)
Hand Protection	Impervious rubber gloves.
Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.
Environmental Exposure Controls	Do not allow material to contaminate ground water system.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Light yellow-green
Odor:	Odorless	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	1.7
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	103 °C / 219 °F
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.2
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

None anticipated

10.5. Incompatible materials

Strong oxidizers. Strong alkalis.

10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure

Most Important Symptoms/Effects

Causes severe eye irritation which may damage tissue.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tartaric acid	87-69-4	2000 - 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	No data available

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.

Eye Contact Causes severe eye irritation which may damage tissue.

Skin Contact Not irritating to skin in rabbits.

Ingestion Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels

No data available

Interactive effects

Skin disorders.

Data limitations

No data available

Substances	CAS Number	Skin corrosion/irritation
Tartaric acid	87-69-4	Non-irritating to the skin (Rabbit) (in vitro)

Substances	CAS Number	Serious eye damage/irritation
Tartaric acid	87-69-4	Causes severe eye irritation (Rabbit)

Substances	CAS Number	Skin Sensitization
Tartaric acid	87-69-4	Did not cause sensitization on laboratory animals (mouse)

Substances	CAS Number	Respiratory Sensitization
Tartaric acid	87-69-4	No information available

Substances	CAS Number	Mutagenic Effects
Tartaric acid	87-69-4	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Tartaric acid	87-69-4	Did not show carcinogenic effects in animal experiments (Rat) (similar substances)

Substances	CAS Number	Reproductive toxicity
Tartaric acid	87-69-4	Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Tartaric acid	87-69-4	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Tartaric acid	87-69-4	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Tartaric acid	87-69-4	Not applicable

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Tartaric acid	87-69-4	E(B)C50 2575.2 mg/L (Skeletonema costatum) E(R)C50 1198 mg/L (Skeletonema costatum) EC50 791.25 mg/L (Skeletonema costatum) EC50 (72h) 51.4043 mg/L (Pseudokirchnerella subcapitata)	LC50 250 mg/L (Scophthalmus maximus) LC50 (96h) > 100 mg/L (Danio rerio)	EC50 (3h) > 1000 mg/L (Activated sludge)	TLM96 330-1000 ppm (Crangon crangon) EC50 46.04 - 165.37 mg/L (Ceriodaphnia dubia) LC50 3753.85 (Acartia tonsa) EC50 (48h) 93.313 mg/L (Daphnia magna)

12.2. Persistence and degradability

Readily biodegradable

Substances	CAS Number	Persistence and Degradability
Tartaric acid	87-69-4	Readily biodegradable (85% @ 28d)

12.3. Bioaccumulative potential

Does not bioaccumulate.

Substances	CAS Number	Bioaccumulation
Tartaric acid	87-69-4	-1

12.4. Mobility in soil

Substances	CAS Number	Mobility
Tartaric acid	87-69-4	No information available

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Follow all applicable community, national or regional regulations regarding waste management methods.

Disposal of any contaminated packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Special precautions during transport
None

HazChem Code
None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 01-Feb-2021

Revision Note
SDS sections updated:
15

Full text of H-Statements referred to under sections 2 and 3
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

Additional information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/
NZ CCID

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This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

HR-6L

Revision date: 30-Apr-2025 **Revision Number:** 24

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name HR-6L

Product Code(s) HM000901

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement Retarder
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Oxides of sulfur. Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store away from oxidizers. Keep container closed when not in use.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Working area parameters, subject to mandatory control (MAC or TSEL)

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure.

Skin and body protection Normal work coveralls.

Hand protection Normal work gloves.

Respiratory protection Not normally necessary.

Environmental exposure controls No information available.

Other protective equipment None known.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Dark brown
Odour	Molasses.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	9.5	
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	> 97.8 °C / 208 °F	(PMCC)
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.21	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Liquid Density	10.08 lbs/gal	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Oxides of sulfur. Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitisation No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: Ecological information

Ecotoxicity Based on available data, the classification criteria are not met

Aquatic ecotoxicity

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability No information available

Bioaccumulation No information available.

Mobility No information available

Other adverse effects No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 30-Apr-2025

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

MICROBOND ADDITIVE

Revision date: 07-Aug-2024 **Revision Number:** 36

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name MICROBOND ADDITIVE

Product Code(s) HM001064

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

Label elements



Signal word
DANGER

Hazard statements
Causes skin irritation.
Causes serious eye damage.

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/clothing and eye/face protection.
IF ON SKIN: Wash with plenty of water and soap.
If skin irritation occurs: Get medical advice/attention.
Take off all contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTRE or doctor.

Other hazards which do not result in classification
Harmful to aquatic life with long lasting effects.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Calcium aluminate	12042-68-1	10 - 30%
Calcium hydroxide	1305-62-0	10 - 30%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Oxides of sulfur. Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do

not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool, dry location. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Incompatible materials None known. Strong acids. Strong bases. Strong oxidising agents.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Calcium aluminate 12042-68-1	-	TWA: 1 mg/m³	TWA: 1 mg/m³ respirable particulate matter
Calcium hydroxide 1305-62-0	TWA: 5 mg/m³	TWA: 1 mg/m³ STEL: 4 mg/m³	TWA: 5 mg/m³

Chemical name	OSHA PEL	NIOSH
Calcium hydroxide 1305-62-0	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 5 mg/m³ not in effect as a result of reconsideration	TWA: 5 mg/m³

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. Tight sealing safety goggles.

Skin and body protection Normal work coveralls. Wear suitable protective clothing. Long sleeved clothing.

Hand protection Normal work gloves. Wear suitable gloves. Impervious gloves.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid

Appearance	No information available
Colour	Light red
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	3.2	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known. Strong acids. Strong bases. Strong oxidising agents.

Hazardous decomposition products

Hazardous decomposition products Oxides of sulfur. Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapour)	63.20 mg/l
ATEmix (inhalation-dust/mist)	10.90 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Calcium aluminate	> 2000 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rat) (similar substance)	1.9 mg/L air (Rat) 4h (similar substance)
Calcium hydroxide	7340 mg/kg-bw (rat)	>2500 mg/kg-bw (rabbit)	> 6.04 mg/L (Rat) 4 h

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Chemical name	Skin corrosion/irritation
Calcium aluminate 12042-68-1	Contact with moist skin may cause skin burns
Calcium hydroxide 1305-62-0	May cause moderate skin irritation. (Rabbit)

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

Chemical name	Serious eye damage/eye irritation
Calcium aluminate 12042-68-1	Causes moderate eye irritation (Rabbit) (similar substances)
Calcium hydroxide 1305-62-0	Causes severe eye irritation (Rabbit)

Respiratory or skin sensitisation

Chemical name	Respiratory sensitisation
Calcium aluminate 12042-68-1	No information available
Calcium hydroxide 1305-62-0	No data of sufficient quality are available.
Chemical name	Skin sensitisation
Calcium aluminate 12042-68-1	Did not cause sensitisation on laboratory animals (similar substances)
Calcium hydroxide 1305-62-0	Not regarded as a sensitizer.

Germ cell mutagenicity

Chemical name	**Germ cell mutagenicity**
Calcium aluminate 12042-68-1	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)
Calcium hydroxide 1305-62-0	In vitro tests did not show mutagenic effects.

Carcinogenicity

Chemical name	**Carcinogenicity**
Calcium aluminate 12042-68-1	No information available
Calcium hydroxide 1305-62-0	Did not show carcinogenic effects in animal experiments (similar substances)

Reproductive toxicity

Chemical name	**Reproductive toxicity**
Calcium aluminate 12042-68-1	No information available
Calcium hydroxide 1305-62-0	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

STOT - single exposure

Chemical name	**STOT - single exposure**
Calcium aluminate 12042-68-1	No information available
Calcium hydroxide 1305-62-0	May cause respiratory irritation.

STOT - repeated exposure

Chemical name	**STOT - repeated exposure**
Calcium aluminate 12042-68-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Calcium hydroxide 1305-62-0	No significant toxicity observed in animal studies at concentration requiring classification.

Aspiration hazard

Chemical name	**Aspiration hazard**
Calcium aluminate 12042-68-1	Not applicable
Calcium hydroxide	Not applicable

1305-62-0	

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity Harmful to aquatic life with long lasting effects.

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Calcium aluminate	EC50 (72h) 3.6 mg/L (Desmodesmus subspicatus) (similar substance) NOEC (72h) 2.6 mg/L (Desmodesmus subspicatus) (similar substance)	LC50 (96h) >100 mg/L (Danio rerio) (similar substance)	EC50 (3h) > 100 mg/L (Activated sludge of a predominantly domestic sewage) (similar substance)	EC50 (48h) 5.4 mg/L (Daphnia magna) (similar substance)
Calcium hydroxide	-	LC50 (96 h) =50.6 mg/L (Oncorhynchus mykiss) LC50 (96 h) =457 mg/L (Gasterosteus aculeatus)	-	EC50 (48 h) =49.1 mg/L (Daphnia magna) EC50 (96 h) =158 mg/L (Crangon septemspinosa) NOAEC (14 d) =32 mg/L (Crangon septemspinosa)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Calcium aluminate 12042-68-1	The methods for determining biodegradability are not applicable to inorganic substances.
Calcium hydroxide 1305-62-0	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
Calcium aluminate 12042-68-1	No information available
Calcium hydroxide 1305-62-0	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 6

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Calcium aluminate - 12042-68-1
Present	-	Calcium hydroxide - 1305-62-0	Present
-			

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 07-Aug-2024

Reason for revision Update to Format SDS sections updated: 2

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
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CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
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h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
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EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
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IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
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ppm – parts per million
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VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

MICROBOND HT CEMENT

Revision Date: 15-Mar-2022 **Revision Number:** 35

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name MICROBOND HT CEMENT

Other means of Identification

Synonyms None

Hazardous Material Number: HM001065

Recommended use of the chemical and restrictions on use

Recommended Use Cement Additive

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA

Other hazards which do not result in classification
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Under normal conditions, first aid procedures are not required.

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
All standard fire fighting media
Extinguishing media which must not be used for safety reasons
None known.

Specific hazards arising from the chemical
Special exposure hazards in a fire
Not applicable

Special protective equipment and precautions for fire fighters
Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling
Handling Precautions
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store in a cool, dry location. Store in a cool well ventilated area. Product has a shelf life of 36 months.
Other Guidelines
No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring
Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	Not applicable	Not applicable

Appropriate engineering controls
Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)
Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
Hand Protection Normal work gloves.
Skin Protection Normal work coveralls.
Eye Protection Wear safety glasses or goggles to protect against exposure.
Other Precautions None known.
Environmental Exposure Controls No information available

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Solid	**Color**	White to Light gray
Odor:	Odorless	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	10.5
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	3.46
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

Molecular Weight	40.32
VOC Content (%)	0%
Bulk Density	100 lbs/ft3

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
None known.
10.6. Hazardous decomposition products
None known.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure
Most Important Symptoms/Effects
No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Contains no hazardous substances in concentrations above cut-off values according	NA	No data available	No data available	No data available

to the competent authority				

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.
Eye Contact May cause mechanical irritation to eye.
Skin Contact None known.
Ingestion None known.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
None known.

Data limitations
No data available

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Bury in a licensed landfill according to federal, state, and local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport

None

HazChem Code

None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory All components are listed on the AIIC or are subject to a relevant exemption, permit, or

	assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 15-Mar-2022

Revision Note
SDS sections updated:
2

Full text of H-Statements referred to under sections 2 and 3
None

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SA-541

Revision date: 30-Apr-2025 **Revision Number:** 27

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SA-541

Product Code(s) HM001226

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use
Recommended use Additive
Uses advised against No information available.

Details of manufacturer or importer
Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact
fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification
Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements
Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

May form combustible dust concentrations in air.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Avoid generation of dust.

Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment as required. Ensure adequate ventilation. Avoid contact with eyes. Do not breathe dust.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Prevent dust cloud.
Methods for cleaning up	Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal. Pick up and transfer to properly labelled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
General hygiene considerations	Do not breathe dust.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.
Incompatible materials	Strong oxidizers.

Section 8: Exposure controls and personal protection

Working area parameters, subject to mandatory control (MAC or TSEL)

Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls	Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses or goggles to protect against exposure. Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear protective clothing appropriate for the work environment.
Hand protection	Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.
Respiratory protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (N95, P2/P3).
Environmental exposure controls	No information available.
Other protective equipment	None known.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White to light straw
Odour	Mild.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	10.5 - 11.5	
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	> 93.3 °C / 200 °F	
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	0.29 oz./ft3	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.4	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	510 °C / 950 °F	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Bulk density	36 lbs/gallon (ca. 610 kg/m^3)	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity	Combustible dust.

Chemical stability

Stability MAY FORM COMBUSTIBLE DUST- AIR MIXTURE. MAY FORM COMBUSTIBLE DUST-AIR MIXTURE.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Possibility of hazardous reactions Dust can form an explosive mixture with air. Dust can form an explosive mixture with air.

Conditions to avoid

Conditions to avoid Generation/formation of dust. Excessive heat. Heating in air. Generation/formation of dust.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitisation

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - single exposure

STOT - repeated exposure

Aspiration hazard

Section 12: Ecological information

Ecotoxicity Based on available data, the classification criteria are not met

Aquatic ecotoxicity

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Bioaccumulation There is no data for this product.

Mobility Based on available data, the classification criteria are not met

Other adverse effects No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date	30-Apr-2025
Reason for revision	Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SCR-100L

Revision date: 04-Oct-2024 **Revision Number:** 34

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SCR-100L

Product Code(s) HM001254

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Retarder
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store away from oxidizers. Store in a dry location. Keep container closed when not in use.
Incompatible materials	Strong oxidizers.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls	Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses or goggles to protect against exposure. (EN-166).
Skin and body protection	Normal work coveralls.
Hand protection	Normal work gloves.
Respiratory protection	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Blue
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	3 (28%) - 4	None known
Melting point / freezing point	-4 °C / 24.8 °F	
Initial boiling point and boiling range		
Flash point	> 93.11 °C / 199.598 °F	(PMCC)
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.16	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	520 °C / 968 °F	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	15-30 cP @ 25°C	
Other information		
Pour Point	No data available	
VOC content	.?	
Liquid Density	9.66	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity	8E-05 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.
Terrestrial ecotoxicity	There is no data for this product.
Persistence and degradability	Based on available data, the classification criteria are not met
Bioaccumulation	There is no data for this product.
Mobility	Based on available data, the classification criteria are not met
Other adverse effects	No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG	Not regulated
IATA	Not regulated
IMDG	Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 10

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 04-Oct-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SILICALITE LIQUID

Revision date: 30-Apr-2025 **Revision Number:** 27

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SILICALITE LIQUID

Product Code(s) HM001274

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Light Weight Cement Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container closed when not in use. Product has a shelf life of 24 months.

Incompatible materials None known.

Section 8: Exposure controls and personal protection

Working area parameters, subject to mandatory control (MAC or TSEL)

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area. Personal protective equipment must be CE marked and should be selected in collaboration with the supplier of such equipment.
The recommended protective equipment and the specified standards are indicative. Standards should be of the latest version.
Risk assessment of the actual workplace / operation (actual risk) may result in other protective measures.
The suitability and durability of the protective equipment will depend on the application.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection	Normal work coveralls.
Hand protection	Normal work gloves.
Respiratory protection	Not normally necessary.
Environmental exposure controls	No information available.
Other protective equipment	Eyewash fountains and safety showers must be easily accessible.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Dark grey
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	6- 8	
Melting point / freezing point	0 °C / 32 °F	
Initial boiling point and boiling range	100 °C / 212 °F	
Flash point	100 °C / 212 °F	
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	22.9	
Relative vapour density	No data available	
Relative density	1.37	
Water solubility	Miscible with water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Liquid Density	11.64 lbs/gal	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity	No information available.

Chemical stability

Stability	Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous decomposition products

Hazardous decomposition products Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitisation

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - single exposure

STOT - repeated exposure

Aspiration hazard

Section 12: Ecological information

Ecotoxicity Based on available data, the classification criteria are not met

Aquatic ecotoxicity

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Bioaccumulation There is no data for this product.

Mobility Based on available data, the classification criteria are not met

Other adverse effects No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 30-Apr-2025

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

NF-6

Revision Date: 11-Feb-2021 **Revision Number:** 41

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name NF-6

Other means of Identification

Synonyms None

Hazardous Material Number: HM001971

Recommended use of the chemical and restrictions on use

Recommended Use Defoamer

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
Carbon dioxide, dry chemical, foam.
Extinguishing media which must not be used for safety reasons
None known.

Specific hazards arising from the chemical
Special exposure hazards in a fire
Use water spray to cool fire exposed surfaces. Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

6.2. Environmental precautions
Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling
Handling Precautions
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store away from oxidizers. Keep container closed when not in use.
Other Guidelines
No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring
Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	Not applicable	Not applicable

Appropriate engineering controls
Engineering Controls A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment (PPE)
Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator with a dust/mist filter. (A2P2/P3)
Hand Protection Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polyvinylchloride gloves. (>= 8 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in

	practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.
Skin Protection	Normal work coveralls.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	None known.
Environmental Exposure Controls	Do not allow material to contaminate ground water system.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Yellow
Odor:	Mild	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	No data available
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	182 °C / 360 °F
Flash Point	> 170 °C / > 340 °F
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.93
Water Solubility	Dispersible
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	385 °C / 725 °F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available
Liquid Density	7.70 lbs/gal

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong oxidizers.
10.6. Hazardous decomposition products
Hydrocarbons. Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure

Most Important Symptoms/Effects

No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No data available	No data available	No data available

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.

Eye Contact None known.

Skin Contact None known.

Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels

No data available

Interactive effects

None known.

Data limitations

No data available

12. Ecological Information

Ecotoxicity

Product Ecotoxicity Data

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Dispose in accordance with local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport
None

HazChem Code
None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 11-Feb-2021

Revision Note
SDS sections updated:
2

Full text of H-Statements referred to under sections 2 and 3
None

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID
Cosmetic Ingredient Review

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

D-AIR 3000L

Revision date: 07-Aug-2024 **Revision Number:** 32

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name D-AIR 3000L

Product Code(s) HM003191

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use
Recommended use Defoamer
Uses advised against No information available.

Details of manufacturer or importer
Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact
fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification
Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements
Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.
Repeated exposure may cause skin dryness or cracking

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Alkenes, C15-C18	93762-80-2	60 - 100%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 24 months.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Normal work coveralls.

Hand protection Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):. Nitrile gloves.

Respiratory protection Not normally necessary.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Opaque
Odour	Hydrocarbon.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	5.5 - 7.9	None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	> 121 °C / 249.8 °F	(PMCC)
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	0.92	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapour)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Alkenes, C15-C18	> 5000 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rat) (similar substance)	40.2 mg/L (Rat) (4h, vapor)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Chemical name	Skin corrosion/irritation
Alkenes, C15-C18 93762-80-2	Not irritating to skin in rabbits. (similar substances)

Serious eye damage/eye irritation

Chemical name	Serious eye damage/eye irritation
Alkenes, C15-C18	Non-irritating to rabbit's eye (similar substances)

93762-80-2	

Respiratory or skin sensitisation

Chemical name	Respiratory sensitisation
Alkenes, C15-C18 93762-80-2	No information available
Chemical name	**Skin sensitisation**
Alkenes, C15-C18 93762-80-2	Did not cause sensitisation on laboratory animals (similar substances)

Germ cell mutagenicity

Chemical name	**Germ cell mutagenicity**
Alkenes, C15-C18 93762-80-2	In vitro tests did not show mutagenic effects. (similar substances)

Carcinogenicity

Chemical name	**Carcinogenicity**
Alkenes, C15-C18 93762-80-2	No information available

Reproductive toxicity

Chemical name	**Reproductive toxicity**
Alkenes, C15-C18 93762-80-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

STOT - single exposure

Chemical name	**STOT - single exposure**
Alkenes, C15-C18 93762-80-2	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

STOT - repeated exposure

Chemical name	**STOT - repeated exposure**
Alkenes, C15-C18 93762-80-2	No information available

Aspiration hazard

Chemical name	**Aspiration hazard**
Alkenes, C15-C18 93762-80-2	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea

			microorganisms	
Alkenes, C15-C18	EC50 (72h) > 1000 mg/L (Selenastrum capicomutum) (similar substance)	LL50 (96h) > 1000 mg/L (Oncorhynchus mykiss) (similar substance) LL50 (96h) > 10000 mg/L (Scopthalmus maximus) (similar substance)	-	EC50 (48h) > 1000 mg/L (Daphnia magna) (similar substance)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Alkenes, C15-C18 93762-80-2	Readily biodegradable (77 - 81% @ 28d)

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
Alkenes, C15-C18 93762-80-2	KOC >5

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Alkenes, C15-C18 - 93762-80-2
Present	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 07-Aug-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces

h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SEM-8™ EMULSIFIER

Revision Date: 04-Feb-2021 **Revision Number:** 53

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name SEM-8™ EMULSIFIER

Other means of Identification

Synonyms None

Hazardous Material Number: HM003938

Recommended use of the chemical and restrictions on use

Recommended Use Emulsifier

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Skin Corrosion/Irritation	Category 2 - H315
Serious Eye Damage/Irritation	Category 1 - H318
Acute Aquatic Toxicity	Category 2 - H401
Chronic Aquatic Toxicity	Category 3 - H412
Flammable liquids.	Category 3 - H226

Label elements, including precautionary statements

Hazard Pictograms



Signal Word DANGER

Hazard Statements:
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H318 - Causes serious eye damage
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

Prevention
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment
P242 - Use only non-sparking tools
P243 - Take action to prevent static discharges.
P264 - Wash face, hands and any exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P280 - Wear protective gloves.
P280 - Wear eye protection/face protection

Response
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use water spray for extinction
P391 - Collect spillage
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

Storage
P403 + P235 - Store in a well-ventilated place. Keep cool

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	**CAS Number**
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	60 - 100%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, move victim to fresh air and seek medical attention.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure

Causes severe eye irritation which may damage tissue. Causes skin irritation. May be harmful if swallowed.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

Special exposure hazards in a fire

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition. Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store in a dry location. Store in a cool well ventilated area. Product has a shelf life of 36 months.

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable	Not applicable

Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment (PPE)

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 8 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Clear light yellow
Odor:	Alcohol	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	7.0-8.5 @ 5%
Freezing Point / Range	-29 °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	33.9 °C / 93 °F Seta closed cup
Evaporation rate	< 1 (BuAc = 1)
Vapor Pressure	15.7 mmHg @ 20C
Vapor Density	< 1 (Air=1)
Specific Gravity	1.054
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

Keep away from heat, sparks and flame.

10.5. Incompatible materials

Strong oxidizers. Strong alkalis.

10.6. Hazardous decomposition products

Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure

Most Important Symptoms/Effects

Causes severe eye irritation which may damage tissue. Causes skin irritation. May be harmful if swallowed.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	4100 mg/kg (Rat) (Similar substance)	>5000 mg/kg (Rabbit (Similar substance)	No data available

Immediate, delayed and chronic health effects from exposure

Inhalation May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact Causes severe eye irritation which may damage tissue.

Skin Contact Causes skin irritation. May cause skin defatting with prolonged exposure.

Ingestion May be harmful if swallowed. Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May affect the heart and cardiovascular system.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
Skin disorders. Eye ailments.

Data limitations
No data available

Substances	CAS Number	Skin corrosion/irritation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Causes moderate skin irritation. (Rabbit) (similar substances)

Substances	CAS Number	Serious eye damage/irritation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Causes severe eye irritation (Rabbit) (similar substances)

Substances	CAS Number	Skin Sensitization
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)

Substances	CAS Number	Respiratory Sensitization
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No information available

Substances	CAS Number	Mutagenic Effects
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)

Substances	CAS Number	Carcinogenic Effects
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	CAS Number	Reproductive toxicity
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Did not show teratogenic effects in animal experiments. (similar substances)

Substances	CAS Number	STOT - single exposure
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	STOT - repeated exposure

Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	EC50 (72h) 73.52 mg/L (Skeletonema costatum) ErC50 (72h) 32 mg/L (Selenstrum capriconutum) (similar substance) NOErC (72h) 9 mg/L (Selenastrum capricornutum) NOEC (72h) 32 mg/L (Skeletonema costatum)	LC50 (96h) 1 - 2.5 mg/L (Salmo trutta) (similar substance) LC50 (96h) 350 mg/L (Scophthalmus maximus) NOEC (30d) 0.88 mg/L (Pimephales promelas) (similar substance)	No information available	EC50 (48h) 1.17 mg/L (Daphnia magna) (similar substance) LC50 (96h) 232.5 mg/L (Acartia tonsa) NOEC (21d) 0.37 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Readily biodegradable

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Log Pow = 0.7

12.4. Mobility in soil

Substances	CAS Number	Mobility
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No information available

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Disposal of any contaminated packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable
EMS:	EmS F-E, S-E

IATA/ICAO

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport

None

HazChem Code

•3Y

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number

None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 04-Feb-2021

Revision Note
SDS sections updated:
2

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H400 - Very toxic to aquatic life
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID
HERA
OSHA

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

GASSTOP EXP

Revision Date: 05-Feb-2021 **Revision Number:** 30

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name GASSTOP EXP

Other means of Identification

Synonyms None

Hazardous Material Number: HM004586

Recommended use of the chemical and restrictions on use

Recommended Use Fluid Loss Additive

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Paraffin based petroleum oil	8012-95-1

Other hazards which do not result in classification
None known

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Paraffin based petroleum oil	8012-95-1	30 - 60%	Asp. Tox. 1 (H304) Aquatic Chronic 4 (H413)

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. Not a hazard under normal use conditions.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and discard.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Rinse mouth. Never give anything by mouth to an unconscious person.

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
Water fog, carbon dioxide, foam, dry chemical.
Extinguishing media which must not be used for safety reasons
Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering.

Specific hazards arising from the chemical
Special exposure hazards in a fire
Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from oxidizers. Keep container closed when not in use. Store in a well ventilated area. Store between 40.5 F (4.7 C) and 120.5 F (49 C).

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Paraffin based petroleum oil	8012-95-1	TWA: 5 mg/m³	TWA: 5 mg/m³

Appropriate engineering controls

Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Chemical-resistant protective gloves (EN 374)

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions None known.

Environmental Exposure Controls No information available

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color**	Yellowish
Odor:	Mild	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	No data available
Freezing Point / Range	< -9 °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	301 - 427 °C
Flash Point	185 °C / 365 °F ASTM D 92
Upper flammability limit	7%
Lower flammability limit	1%
Evaporation rate	No data available
Vapor Pressure	< 0.1 mmHg
Vapor Density	> 10 (air = 1)
Specific Gravity	1.057
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	360 °C / 680 °F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

None anticipated

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation. Ingestion.

Symptoms related to exposure

Most Important Symptoms/Effects

No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Paraffin based petroleum oil	8012-95-1	> 2000 mg/kg (Rat) >5000 mg/kg (Rat) (similar substance)	> 15000 mg/kg (Rodent) > 2000 mg/kg (Rabbit) (similar substance)	> 0.210 mg/L (Rat) (similar substance)

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.
Eye Contact May cause mild eye irritation.
Skin Contact May cause mild skin irritation.
Ingestion Aspiration can be a hazard if this material is swallowed.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
None known.

Data limitations
No data available

Substances	CAS Number	Skin corrosion/irritation
Paraffin based petroleum oil	8012-95-1	Non-irritating to the skin (similar substances)

Substances	CAS Number	Serious eye damage/irritation
Paraffin based petroleum oil	8012-95-1	Non-irritating to the eye (similar substances)

Substances	CAS Number	Skin Sensitization
Paraffin based petroleum oil	8012-95-1	Not confirmed to cause skin or respiratory sensitization. (similar substances)

Substances	CAS Number	Respiratory Sensitization
Paraffin based petroleum oil	8012-95-1	No information available

Substances	CAS Number	Mutagenic Effects
Paraffin based petroleum oil	8012-95-1	In vitro tests did not show mutagenic effects. (similar substances)

Substances	CAS Number	Carcinogenic Effects
Paraffin based petroleum oil	8012-95-1	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	CAS Number	Reproductive toxicity
Paraffin based petroleum oil	8012-95-1	No information available

Substances	CAS Number	STOT - single exposure
Paraffin based petroleum oil	8012-95-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	STOT - repeated exposure
Paraffin based petroleum oil	8012-95-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Paraffin based petroleum oil	8012-95-1	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Paraffin based petroleum oil	8012-95-1	No information available	LC50 (96h) >1000 mg/L (Oncorhynchus mykiss)	No information available	No information available

			LC50 (96h) > 100 mg/L (Lepomis macrochirus)		

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Paraffin based petroleum oil	8012-95-1	(15 - 35% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Paraffin based petroleum oil	8012-95-1	5.71

12.4. Mobility in soil

Substances	CAS Number	Mobility
Paraffin based petroleum oil	8012-95-1	KOC > 3

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Special precautions during transport
None

HazChem Code
None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 05-Feb-2021

Revision Note
SDS sections updated:
2

Full text of H-Statements referred to under sections 2 and 3
H304 - May be fatal if swallowed and enters airways
H413 - May cause long lasting harmful effects to aquatic life

Additional information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter

NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID
BIBRA
OSHA
SIDS

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

CEMENT - CLASS G + 35% SSA-1

Revision date: 05-Aug-2024 **Revision Number:** 33

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name CEMENT - CLASS G + 35% SSA-1

Product Code(s) HM004641

Other means of identification

Synonyms CEMENT CLASS K

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitisation	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity — single exposure	Category 3
Specific target organ toxicity — repeated exposure	Category 1

Label elements



Signal word
DANGER

Hazard statements
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause cancer.
May cause respiratory irritation.
Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash face, hands and any exposed skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/fume/gas/mist/vapours/spray.
Do not eat, drink or smoke when using this product.
Wear protective gloves.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water and soap.
Take off all contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTRE or doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTRE or doctor.
Precautionary Statements - Storage
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Portland cement	65997-15-1	60 - 100%
Crystalline silica, quartz	14808-60-7	10 - 30%

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention.
Eye contact	Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Itching. Rashes. Hives.
Effects of Exposure	May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Note to doctors	May cause sensitisation in susceptible persons. Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media	None - does not burn.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	Product is or contains a sensitiser. May cause sensitisation by skin contact. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash it before reuse. Avoid breathing vapours or mists.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 24 months. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Incompatible materials Hydrofluoric acid. Strong acids. Strong bases. Strong oxidising agents.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Portland cement 65997-15-1	TWA: 10 mg/m³	TWA: 3 mg/m³ TWA: 1 mg/m³	TWA: 1 mg/m³ particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m³	TWA: 0.025 mg/m³	-

Chemical name	OSHA PEL	NIOSH
Portland cement 65997-15-1	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction TWA: 50 mppcf <1% Crystalline silica	IDLH: 5000 mg/m³ TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m³ (vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

	: (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. Dust proof goggles. (EN-166). Tight sealing safety goggles.

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear suitable protective clothing. Long sleeved clothing.

Hand protection Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):. Normal work gloves. Wear suitable gloves. Impervious gloves.

Respiratory protection Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid
Appearance No information available
Colour Gray
Odour Odourless.
Odour threshold No information available

Property	Values	Remarks • Method
pH	12.4	None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	2.97	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	

Autoignition temperature	No data available
Decomposition temperature	
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Other information	
Pour Point	No data available
VOC content	No information available
Particle characteristics	No information available

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Hydrofluoric acid. Strong acids. Strong bases. Strong oxidising agents.

Hazardous decomposition products

Hazardous decomposition products Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. May cause sensitisation by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Portland cement	> 2000 mg/kg (Rat)	> 2000 mg/kg	> 1 mg/L (Rat) 4h
Crystalline silica, quartz	> 15000 mg/kg (human)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Chemical name	**Skin corrosion/irritation**
Portland cement 65997-15-1	Irritating to skin. (Rabbit)
Crystalline silica, quartz 14808-60-7	Non-irritating to the skin

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

Chemical name	**Serious eye damage/eye irritation**
Portland cement 65997-15-1	Causes severe irritation and or burns
Crystalline silica, quartz 14808-60-7	Non-irritating to the eye

Respiratory or skin sensitisation May cause an allergic skin reaction.

Chemical name	Respiratory sensitisation
Portland cement 65997-15-1	No information available
Crystalline silica, quartz 14808-60-7	Not classified
Chemical name	**Skin sensitisation**
Portland cement 65997-15-1	May cause sensitisation by skin contact
Crystalline silica, quartz 14808-60-7	Not classified

Germ cell mutagenicity No information available.

Chemical name	**Germ cell mutagenicity**
Portland cement 65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz 14808-60-7	Not regarded as mutagenic.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

Chemical name	Carcinogenicity
Portland cement 65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz 14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Crystalline silica, quartz - 14808-60-7	Carc. 1A	-	Group 1

Legend

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans

Reproductive toxicity No information available.

Chemical name	Reproductive toxicity
Portland cement 65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz 14808-60-7	This product does not contain any known or suspected reproductive hazards

STOT - single exposure May cause respiratory irritation.

Chemical name	STOT - single exposure
Portland cement 65997-15-1	May cause respiratory irritation.
Crystalline silica, quartz 14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Chemical name	STOT - repeated exposure
Portland cement 65997-15-1	No data of sufficient quality are available.
Crystalline silica, quartz 14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Aspiration hazard No information available.

Chemical name	Aspiration hazard
Portland cement 65997-15-1	Not applicable
Crystalline silica, quartz 14808-60-7	Based on available data, the classification criteria are not met

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Crystalline silica, quartz	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	-	LL50(24 h)>10000 mg/L (Daphnia magna)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Portland cement 65997-15-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, quartz 14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
Portland cement 65997-15-1	No information available
Crystalline silica, quartz 14808-60-7	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 4

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Portland cement - 65997-15-1
Present	-	Crystalline silica, quartz - 14808-60-7	Contact supplier for inventory compliance status
-			

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 05-Aug-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road

bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SUPER CBL EXP

Revision date: 19-Dec-2023 **Revision Number:** 2

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SUPER CBL EXP

Product Code(s) HM004852

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

GHS Classification

Aspiration hazard	Category 1

Label elements



Signal word
DANGER

Hazard statements
May be fatal if swallowed and enters airways.

Precautionary Statements - Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor.
Do NOT induce vomiting.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Paraffin based petroleum oil	8012-95-1	30 - 60%
Aluminum	7429-90-5	30 - 60%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention. Delayed pulmonary edema may occur.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Because of the danger of aspiration, emesis or gastric lavage should not be used unless the risk is justified by the presence of additional toxic substances.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media	Water fog, carbon dioxide, foam, dry chemical.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	No information available. Carbon monoxide and carbon dioxide. Aluminum fumes. Flammable hydrogen gas.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
General hygiene considerations	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store away from oxidizers. Keep container closed when not in use. Store between 40.5 F (4.7 C) and 120.5 F (49 C). Store in a well ventilated area. Product has a shelf life of 24 months. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked

up. Keep out of the reach of children. Store away from other materials.

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis. Halogenated compounds.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Paraffin based petroleum oil 8012-95-1	TWA: 5 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 5 mg/m³ inhalable particulate matter excluding metal working fluids, highly & severely refined
Aluminum 7429-90-5	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 10 mg/m³	TWA: 1 mg/m³ respirable particulate matter

Chemical name	OSHA PEL	NIOSH
Paraffin based petroleum oil 8012-95-1	TWA: 5 mg/m³ (vacated) TWA: 5 mg/m³	IDLH: 2500 mg/m³ TWA: 5 mg/m³ STEL: 10 mg/m³
Aluminum 7429-90-5	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 15 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection None known. If splashes are likely to occur, wear safety glasses with side-shields.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

Hand protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

Respiratory protection Not normally necessary.
If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Environmental exposure controls No information available.

Other protective equipment None known.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Gray / Silver
Odour	Mild.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	185 °C / 365 °F	ASTM D 92
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	7	
Lower flammability or explosive limits	1	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.23	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	360 °C / 680 °F	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis. Halogenated compounds.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide. Aluminum fumes. Flammable hydrogen gas.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. May cause irritation.

Skin contact Repeated exposure may cause skin dryness or cracking.

Ingestion Specific test data for the substance or mixture is not available. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways.

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapour)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Paraffin based petroleum oil	> 2000 mg/kg (Rat) >5000 mg/kg (Rat) (similar substance)	> 15000 mg/kg (Rodent) > 2000 mg/kg (Rabbit) (similar substance)	> 0.210 mg/L (Rat) (similar substance)
Aluminum	> 5000 mg/kg (Rat) (Similar substance)	> 5000 mg/kg (Rabbit) (Similar substance)	> 2.3 mg/L (Rat, 4 h, dust) (Similar substance)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Chemical name	Skin corrosion/irritation
Paraffin based petroleum oil 8012-95-1	Non-irritating to the skin (similar substances)
Aluminum 7429-90-5	Non-irritating to the skin (Rabbit) (similar substances)

Serious eye damage/eye irritation No information available.

Chemical name	Serious eye damage/eye irritation
Paraffin based petroleum oil	Non-irritating to the eye (similar substances)

8012-95-1	
Aluminum 7429-90-5	Non-irritating to the eye (Rabbit) (similar substances)

Respiratory or skin sensitisation No information available.

Chemical name	Respiratory sensitisation
Paraffin based petroleum oil 8012-95-1	No information available
Aluminum 7429-90-5	Did not cause sensitisation on laboratory animals (mouse) (similar substances)
Chemical name	**Skin sensitisation**
Paraffin based petroleum oil 8012-95-1	Not confirmed to cause skin or respiratory sensitization. (similar substances)
Aluminum 7429-90-5	Did not cause sensitisation on laboratory animals (guinea pig) (similar substances)

Germ cell mutagenicity No information available.

Chemical name	**Germ cell mutagenicity**
Paraffin based petroleum oil 8012-95-1	In vitro tests did not show mutagenic effects. (similar substances)
Aluminum 7429-90-5	In vivo tests did not show mutagenic effects. (similar substances)

Carcinogenicity

Chemical name	**Carcinogenicity**
Paraffin based petroleum oil 8012-95-1	Did not show carcinogenic effects in animal experiments (similar substances)
Aluminum 7429-90-5	Did not show carcinogenic or teratogenic effects in animal experiments

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Paraffin based petroleum oil - 8012-95-1	-	-	Group 1 Group 3

Legend

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

Chemical name	**Reproductive toxicity**
Paraffin based petroleum oil 8012-95-1	No information available
Aluminum 7429-90-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

STOT - single exposure No information available.

Chemical name	**STOT - single exposure**
Paraffin based petroleum oil 8012-95-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Aluminum 7429-90-5	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure No information available.

Chemical name	STOT - repeated exposure
Paraffin based petroleum oil 8012-95-1	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Aluminum 7429-90-5	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Aspiration hazard May be fatal if swallowed and enters airways.

Chemical name	Aspiration hazard
Paraffin based petroleum oil 8012-95-1	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Aluminum 7429-90-5	Not applicable

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Paraffin based petroleum oil	-	LC50 (96h) >1000 mg/L (Oncorhynchus mykiss) LC50 (96h) > 100 mg/L (Lepomis macrochirus)	-	-
Aluminum	EC50(72h): 448.05 mg/L (Skeletonema costatum)	Limit Test: > 1 mg/L (Scophthalmus maximus)	-	LC50(48h): 2.47 mg/L (Arcatia tonsa)

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Paraffin based petroleum oil 8012-95-1	(15 - 35% @ 28d)
Aluminum 7429-90-5	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
Paraffin based petroleum oil 8012-95-1	KOC > 3
Aluminum 7429-90-5	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Poison Schedule Number 5

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Paraffin based petroleum oil - 8012-95-1
Present	-	Aluminum - 7429-90-5	Present
-			

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC Contact supplier for inventory compliance status.

NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 19-Dec-2023

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon

UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

CFR-8L

Revision Date: 29-Jun-2023 **Revision Number:** 29

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name CFR-8L

Other means of Identification

Synonyms None

Hazardous Material Number: HM005627

Recommended use of the chemical and restrictions on use

Recommended Use Cement Dispersant

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA

Other hazards which do not result in classification
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Under normal conditions, first aid procedures are not required.

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
Water fog, carbon dioxide, foam, dry chemical.
Extinguishing media which must not be used for safety reasons
None known.

Specific hazards arising from the chemical
Special exposure hazards in a fire
Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters
Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from oxidizers. Keep container closed when not in use.

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring

Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	Not applicable	Not applicable

Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Personal protective equipment must be CE marked and should be selected in collaboration with the supplier of such equipment.
The recommended protective equipment and the specified standards are indicative. Standards should be of the latest version.
Risk assessment of the actual workplace / operation (actual risk) may result in other protective measures.
The suitability and durability of the protective equipment will depend on the application.

Personal protective equipment (PPE)

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Not normally necessary.

Hand Protection Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure. (EN-166)

Other Precautions Eyewash fountains and safety showers must be easily accessible.
Environmental Exposure Controls Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Color Brown-black
Odor: Characteristic
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	9 - 11.3
Freezing Point / Range	-7 °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	100 °C / 212 °F
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	< 18 mmHg
Vapor Density	No data available
Specific Gravity	1.17 - 1.2
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong oxidizers.
10.6. Hazardous decomposition products
Oxides of sulfur.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure
Most Important Symptoms/Effects
No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No data available	No data available	No data available

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.
Eye Contact May cause mechanical irritation to eye.
Skin Contact None known.
Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
None known.

Data limitations
No data available

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation

Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	No information available

Other adverse effects
No information available
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods
Disposal should be made in accordance with federal, state, and local regulations.

Disposal of any contaminated packaging
Follow all applicable national or local regulations.

Environmental regulations
Not applicable

14. Transport Information

Transportation Information
Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Special precautions during transport
None

HazChem Code
None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 29-Jun-2023

Revision Note
Update to Format

Full text of H-Statements referred to under sections 2 and 3
None

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight

d - day

Key literature references and sources for data
www.ChemADVISOR.com/

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SODIUM FLUORESCEIN POWDER

Revision Date: 15-Mar-2022 **Revision Number:** 5

1. Product Identifier & Identity for the Chemical

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name SODIUM FLUORESCEIN POWDER

Other means of Identification

Synonyms None

Hazardous Material Number: HM007136

Recommended use of the chemical and restrictions on use

Recommended Use Dye

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-mail Address fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

2. Hazard Identification

Statement of Hazardous Nature Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Not classified

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements: Not Classified

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

Contains

Substances	**CAS Number**
Sodium fluorescein	518-47-8

Other hazards which do not result in classification
None known

For the full text of the H-phrases mentioned in this Section, see Section 16

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Sodium fluorescein	518-47-8	60 - 100%	Not classified

4. First aid measures

Description of necessary first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure
No significant hazards expected.

Medical Attention and Special Treatment
Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment
Suitable Extinguishing Media
All standard fire fighting media
Extinguishing media which must not be used for safety reasons
None known.

Specific hazards arising from the chemical
Special exposure hazards in a fire
Decomposition in fire may produce harmful gases.

Special protective equipment and precautions for fire fighters
Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use appropriate protective equipment. Avoid creating and breathing dust.

6.2. Environmental precautions
None known.

6.3. Methods and material for containment and cleaning up
Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling
Handling Precautions
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Storage Information
Store away from acids. Store in a cool, dry location.
Other Guidelines
No information available

8. Exposure Controls/Personal Protection

Control parameters - exposure standards, biological monitoring
Exposure Limits

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Sodium fluorescein	518-47-8	Not applicable	Not applicable

Appropriate engineering controls
Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)
Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection Dust/mist respirator. (N95, P2/P3)
Hand Protection Normal work gloves.
Skin Protection Normal work coveralls.
Eye Protection Wear safety glasses or goggles to protect against exposure.
Other Precautions None known.
Environmental Exposure Controls No information available

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Physical State: Solid
Odor: Odorless
Color Red-orange
Odor Threshold: No information available

Property	Values	Remarks/ - Method
pH:	No data available	
Freezing Point / Range	No data available	
Melting Point / Range	No data available	

Pour Point / Range	No data available
Boiling Point / Range	290 °C / 554 °F
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	No data available
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

Molecular Weight	376.28
VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong acids.
10.6. Hazardous decomposition products
Hydrogen fluoride.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation.

Symptoms related to exposure
Most Important Symptoms/Effects
No significant hazards expected.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium fluorescein	518-47-8	6721 mg/kg (Rat) 2500 mg/kg (Rabbit) 4738 mg/kg (Mouse)	No data available	No data available

Immediate, delayed and chronic health effects from exposure

Inhalation	May cause mild respiratory irritation.
Eye Contact	May cause mild eye irritation.
Skin Contact	Prolonged or repeated contact may cause slight skin irritation.
Ingestion	May cause damage to bones and teeth.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels

No data available

Interactive effects
None known.

Data limitations
No data available

Substances	CAS Number	Skin corrosion/irritation
Sodium fluorescein	518-47-8	Substance may cause slight skin irritation

Substances	CAS Number	Serious eye damage/irritation
Sodium fluorescein	518-47-8	May cause mild eye irritation.

Substances	CAS Number	Skin Sensitization
Sodium fluorescein	518-47-8	No information available

Substances	CAS Number	Respiratory Sensitization
Sodium fluorescein	518-47-8	No information available

Substances	CAS Number	Mutagenic Effects
Sodium fluorescein	518-47-8	In vitro tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Sodium fluorescein	518-47-8	No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity
Sodium fluorescein	518-47-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Sodium fluorescein	518-47-8	No data of sufficient quality are available.

Substances	CAS Number	STOT - repeated exposure
Sodium fluorescein	518-47-8	No data of sufficient quality are available.

Substances	CAS Number	Aspiration hazard
Sodium fluorescein	518-47-8	Not applicable

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Sodium fluorescein	518-47-8	No information available	LC50 (96h) 997 mg/L (Psetta maxima) LC50 (96h) 1372 mg/L (Oncorhynchus mykiss) LC50 (96h) 2267 mg/L (Ictalurus punctatus) LC50 (96h) 3433 mg/L (Lepomis macrochirus)	No information available	LC50 (48h) 337 mg/L (Daphnia pulex)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sodium fluorescein	518-47-8	Readily biodegradable (100% @ 20d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Sodium fluorescein	518-47-8	Log Kow = -0.67 (estimated)

12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium fluorescein	518-47-8	KOC = < 2

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Bury in a licensed landfill according to federal, state, and local regulations.

Disposal of any contaminated packaging

Follow all applicable national or local regulations.

Environmental regulations

Not applicable

14. Transport Information

Transportation Information

Australia ADG

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	Not restricted
UN proper shipping name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Special precautions during transport

None

HazChem Code

None Allocated

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate.
New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

International Agreements

Montreal Protocol - Ozone Depleting Substances:	Does not apply.
Stockholm Convention - Persistent Organic Pollutants:	Does not apply
Rotterdam Convention - Prior Informed Consent:	Does not apply.
Basel Convention - Hazardous Waste:	Does not apply.

16. Other information

Date of preparation or review

Revision Date: 15-Mar-2022

Revision Note
SDS sections updated:
2

Full text of H-Statements referred to under sections 2 and 3
None

Additional information: For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key abreviations or acronyms used
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

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This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

SA-1015

Revision date: 09-Aug-2024 **Revision Number:** 25

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SA-1015

Product Code(s) HM007221

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Suspending Agent
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.
Effects of Exposure	No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media	Water fog, carbon dioxide, foam, dry chemical.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	No information available. Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a dry location. Store away from oxidizers. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep container closed when not in use.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

Hand protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN

149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White to tan
Odour	Slight.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	7 (1%)	None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	> 93.11 °C / 199.598 °F	(PMCC)
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.45 - 1.55	
Water solubility	Forms gel	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	204 °C / 399.2 °F	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

Component Information
See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitisation

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - single exposure

STOT - repeated exposure

Aspiration hazard

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Bioaccumulation There is no data for this product.

Mobility

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	Product contains one or more components not listed on inventory
NZIoC	Product contains one or more components not listed on inventory

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 09-Aug-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day

Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

LATEX 4000

Revision date: 19-Dec-2023 **Revision Number:** 5

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name LATEX 4000

Product Code(s) HM008963

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.
Corrosive to the respiratory tract

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Contains no hazardous substances in concentrations above cut-off values according to the competent authority.	NA	60 - 100%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Thermal decomposition can lead to release of toxic/corrosive gases and vapours

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep from freezing. Keep containers tightly closed in a cool, well ventilated place.

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles, Face-shield. (EN-166).

Skin and body protection Wear protective clothing appropriate for the work environment.

Hand protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and

instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Colour	Milky white
Odour	Faint.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	6.5-7.5	None known
Melting point / freezing point	0 °C / 32 °F	
Initial boiling point and boiling range	100 °C / 212 °F	
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.02	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	80 - 650 mPa.s Brookfield RV 1/10	
Other information		
VOC content	.?	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis.

Hazardous decomposition products

Hazardous decomposition products Thermal decomposition can lead to release of toxic/corrosive gases and vapours.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapour)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.0000 mg/l

Component Information

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitisation No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability No information available

Bioaccumulation No information available.

Mobility No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 6

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Contains no hazardous substances in concentrations above cut-off values according to the competent authority. - NA
Contact supplier for inventory compliance status	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 19-Dec-2023

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

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End of Safety Data Sheet

3.2. Mixtures

Chemical name	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Halliburton AGHS and pure GHS Classification
Contains no hazardous substances in concentrations above cut-off values according to the competent authority.	NA	60 - 100%		

Product Service Line (PSL) Cementing
Principle Route of Exposure Ingestion, Skin contact, Eye contact, Inhalation
Hazard Pictograms
Precautionary statements

HALLIBURTON

PSL Logo

HALLIBURTON

Cementing

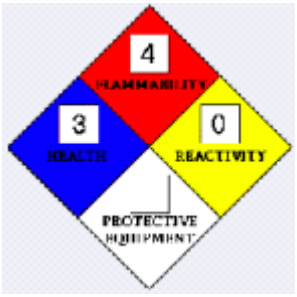
Transport information
Shipping classification for non-DG Not restricted

HS Code 4002.11.0000
ECCN EAR99

Contains

NFPA	**Health hazards**	0	**Flammability**	0	**Instability**	0	**Special hazards**	-	
HMIS	**Health hazards**	0	**Flammability**	0	**Physical hazards**	0	**Personal protection**	X	

NFPA Label



Small label special phrases See SDS for details

Batch No. [reference number]

SAP Part Number(s):

Net/Gross Package Weight:

Product identifier

Product Name LATEX 4000

HALLIBURTON

SAFETY DATA SHEET

ChannelFix™

Revision date: 06-Nov-2023 **Revision Number:** 3

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name ChannelFix™

Product Code(s) HM009066

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Cement Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Polymer	Proprietary	60 - 100%

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store away from oxidizers. Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Working area parameters, subject to mandatory control (MAC or TSEL)

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Localized ventilation should be used to control dust levels.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear protective clothing appropriate for the work environment.

Hand protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and

instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	Off white
Odour	Odourless.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	236.1 °C / 457 °F	Cleveland Open Cup (COC)
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Bulk density	23 lbs/ft3 @ 20 C	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Chemical name	Skin corrosion/irritation
Polymer	No information available

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Chemical name	Serious eye damage/eye irritation
Polymer	No data of sufficient quality are available.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Chemical name	Respiratory sensitisation
Polymer	No information available

Chemical name	Skin sensitisation
Polymer	No information available

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Chemical name	Germ cell mutagenicity
Polymer	No information available

Carcinogenicity

Chemical name	Carcinogenicity
Polymer	No data of sufficient quality are available.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Polymer -	-	-	Group 3

Legend

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity Based on available data, the classification criteria are not met.

Chemical name	Reproductive toxicity
Polymer	No information available

STOT - single exposure Based on available data, the classification criteria are not met.

Chemical name	STOT - single exposure
Polymer	No information available

STOT - repeated exposure Based on available data, the classification criteria are not met.

Chemical name	STOT - repeated exposure
Polymer	No significant toxicity observed in animal studies at concentration requiring classification.

Aspiration hazard Based on available data, the classification criteria are not met.

Chemical name	Aspiration hazard
Polymer	No information available

Section 12: Ecological information

Ecotoxicity Based on available data, the classification criteria are not met

Aquatic ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Polymer	EC50 (72h) > 1000 mg/L (Skeletonema costatum)	LC50: > 1000 mg/L (Scophthalmus maximus)	-	-

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability Based on available data, the classification criteria are not met

Chemical name	Persistence and degradability
Polymer	No information available

Bioaccumulation There is no data for this product.

Mobility Based on available data, the classification criteria are not met

Chemical name	Mobility
Polymer	No information available

Other adverse effects No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Polymer -	Present	-

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 06-Nov-2023

Reason for revision Initial Release

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization

LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

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End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

IsoGuard Cement Additive

Revision date: 05-Aug-2024 **Revision Number:** 5

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name IsoGuard Cement Additive

Product Code(s) HM009464

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Non-Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS). Not classified.

Other hazards which do not result in classification

No information available.

Section 3: Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	CAS No.	Weight-%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool well ventilated area. Keep from heat, sparks, and open flames.

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure.

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

Hand protection Normal work gloves.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational

exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White
Odour	Characteristic.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	5 5 - 7 - 7	(40 g/L% in H2O)
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.3	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
Pour Point	No data available	
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis.

Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Routes of Exposure Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitisation

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - single exposure

STOT - repeated exposure

Aspiration hazard

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Bioaccumulation There is no data for this product.

Mobility

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Not applicable

Section 16: Any other relevant information

Revision date 05-Aug-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight

CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS
Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

TUNED DEFENSE CEMENT SPACER

Revision date: 29-Jan-2024 **Revision Number:** 4

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name TUNED DEFENSE CEMENT SPACER

Product Code(s) HM008976

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement Additive
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Carcinogenicity	Category 1A

Label elements

Signal word
DANGER

Hazard statements
May cause cancer by inhalation.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/eye protection/face protection.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Crystalline silica, quartz	14808-60-7	0.1 - 1%

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure May cause cancer by inhalation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the No information available.

chemical

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C). Carbon monoxide and carbon dioxide.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store away from acids. Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 24 months. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	Australia	New Zealand	ACGIH TLV
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz	TWA: 50 µg/m³	IDLH: 50 mg/m³ respirable dust

14808-60-7	(vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	TWA: 0.05 mg/m³ respirable dust

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Localized ventilation should be used to control dust levels.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Hand protection Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace. Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):. Nitrile gloves.

Respiratory protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3).

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid
Appearance No information available
Color Dark brown
Odor No information available.
Odor threshold No information available

Property	Values	Remarks • Method
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	

Vapor pressure	No data available
Relative vapor density	No data available
Relative density	No data available
Water solubility	Insoluble in water
Solubility(ies)	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Other information	
VOC content	No information available
Particle characteristics	No information available

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers. Strong acids. Strong alkalis.

Hazardous decomposition products

Hazardous decomposition products Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C). Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Crystalline silica, quartz	> 15000 mg/kg (human)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Chemical name	**Skin corrosion/irritation**
Crystalline silica, quartz 14808-60-7	Non-irritating to the skin

Serious eye damage/eye irritation No information available.

Chemical name	**Serious eye damage/eye irritation**
Crystalline silica, quartz 14808-60-7	Non-irritating to the eye No information available

Respiratory or skin sensitization No information available.

Chemical name	Respiratory sensitization
Crystalline silica, quartz 14808-60-7	No information available
Chemical name	Skin sensitization
Crystalline silica, quartz 14808-60-7	No information available

Germ cell mutagenicity No information available.

Chemical name	**Germ cell mutagenicity**
Crystalline silica, quartz 14808-60-7	Not regarded as mutagenic.

Carcinogenicity No information available.

Chemical name	**Carcinogenicity**
Crystalline silica, quartz 14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

Chemical name	Australia	European Union	IARC
Crystalline silica, quartz - 14808-60-7	Carc. 1A	-	Group 1

Reproductive toxicity No information available.

Chemical name	**Reproductive toxicity**
Crystalline silica, quartz 14808-60-7	No information available

STOT - single exposure No information available.

Chemical name	**STOT - single exposure**

Crystalline silica, quartz 14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure No information available.

Chemical name	STOT - repeated exposure
Crystalline silica, quartz 14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Aspiration hazard No information available.

Chemical name	Aspiration hazard
Crystalline silica, quartz 14808-60-7	No information available

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Crystalline silica, quartz	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	-	LL50(24 h)>10000 mg/L (Daphnia magna)

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Crystalline silica, quartz 14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
Crystalline silica, quartz 14808-60-7	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Crystalline silica, quartz - 14808-60-7
Contact supplier for inventory compliance status	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 29-Jan-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

TUNED SPACER E+

Revision date: 19-Feb-2024 **Revision Number:** 34

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name TUNED SPACER E+

Product Code(s) HM003335

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement Spacer
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Carcinogenicity	Category 1A
Specific target organ toxicity — repeated exposure	Category 2

Label elements



Signal word
DANGER

Hazard statements
May cause cancer.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.
Do not breathe dust/fume/gas/mist/vapours/spray.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Crystalline silica, quartz	14808-60-7	1 - 5%
Non-hazardous ingredients	Proprietary	Balance

Section 4: First aid measures

Description of first aid measures

General advice IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Water fog, carbon dioxide, foam, dry chemical.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Oxides of sulfur. Carbon monoxide and carbon dioxide. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Avoid generation of dust. Collect spillage with a shovel and broom, or similar.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and

immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

Incompatible materials Strong oxidizers.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m³ (vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear suitable protective clothing.

Hand protection Normal work gloves. Wear suitable gloves.

Respiratory protection Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

Environmental exposure controls No information available.

Other protective equipment Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Colour	White to light straw
Odour	Odourless.
Odour threshold	No information available

Property	Values	Remarks • Method
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Relative vapour density	No data available	
Relative density	1.88 - 2.05	
Water solubility	Soluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizers.

Hazardous decomposition products

Hazardous decomposition products Oxides of sulfur. Carbon monoxide and carbon dioxide. Amorphous silica may transform at

elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00	mg/kg
ATEmix (dermal)	99,999.00	mg/kg
ATEmix (inhalation-gas)	99,999.00	ppm
ATEmix (inhalation-vapour)	99,999.00	mg/l
ATEmix (inhalation-dust/mist)	99,999.00	mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Crystalline silica, quartz	> 15000 mg/kg (human)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Chemical name	Skin corrosion/irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the skin

Serious eye damage/eye irritation No information available.

Chemical name	Serious eye damage/eye irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the eye

Respiratory or skin sensitisation No information available.

Chemical name	Respiratory sensitisation
Crystalline silica, quartz 14808-60-7	No information available
Chemical name	Skin sensitisation
Crystalline silica, quartz 14808-60-7	No information available

Germ cell mutagenicity No information available.

Chemical name	Germ cell mutagenicity
Crystalline silica, quartz 14808-60-7	Not regarded as mutagenic.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer. No information available.

Chemical name	Carcinogenicity
Crystalline silica, quartz 14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Crystalline silica, quartz - 14808-60-7	Carc. 1A	-	Group 1

Legend

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans

Reproductive toxicity No information available.

Chemical name	Reproductive toxicity
Crystalline silica, quartz 14808-60-7	This product does not contain any known or suspected reproductive hazards

STOT - single exposure No information available.

Chemical name	STOT - single exposure
Crystalline silica, quartz 14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure. No information available.

Chemical name	STOT - repeated exposure
Crystalline silica, quartz 14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Aspiration hazard No information available.

Chemical name	Aspiration hazard
Crystalline silica, quartz 14808-60-7	Based on available data, the classification criteria are not met

Other adverse effects Based on available data, the classification criteria are not met.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea

Crystalline silica, quartz	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	-	LL50(24 h)>10000 mg/L (Daphnia magna)

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability No information available

Chemical name	Persistence and degradability
Crystalline silica, quartz 14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation No information available.

Mobility No information available

Chemical name	Mobility
Crystalline silica, quartz 14808-60-7	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Crystalline silica, quartz - 14808-60-7
Contact supplier for inventory compliance status	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

TSCA	All components listed on inventory or are exempt
AIIC	All components listed on inventory or are exempt
NZIoC	All components listed on inventory or are exempt

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 19-Feb-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)

EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitisers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

SAFETY DATA SHEET

TUNED® SPACER III

Revision date: 10-Jan-2024 **Revision Number:** 34

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name TUNED® SPACER III

Product Code(s) HM005735

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Cement Spacer
Uses advised against No information available.

Details of manufacturer or importer

Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 (08) 6424 4800

For further information, please contact

fdunexchem@halliburton.com

Emergency telephone number

Australia Emergency Telephone Number + 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

Australian Poisons Information Centre 24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

Section 2: Hazard(s) identification

Statement of Hazardous Nature: Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

GHS Classification

Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

Label elements



Signal word
DANGER

Hazard statements
May cause cancer.
Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Precautionary Statements - Storage
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Crystalline silica, quartz	14808-60-7	60 - 100%
Non-hazardous ingredients	Proprietary	Balance

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

Section 4: First aid measures

Description of first aid measures

General advice IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media All standard fire fighting media.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Specific hazards arising from the chemical No information available.

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation.

General hygiene considerations If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Do not reuse empty container. Store in a well ventilated area. Keep container closed when not in use. Store locked up.

Incompatible materials Hydrofluoric acid.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m³ (vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. (EN-166).

Skin and body protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. Wear suitable protective clothing.

Hand protection Normal work gloves. Wear suitable gloves.

Respiratory protection Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

Environmental exposure controls No information available.

Other protective equipment None known. Eyewash fountains and safety showers must be easily accessible.

Thermal hazards No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Color	Dark gray
Odor	Odorless.
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH		None known
Melting point / freezing point	No data available	
Initial boiling point and boiling range		
Flash point	No data available	None known
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	
Relative vapor density	No data available	
Relative density	2.51	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Other information		
VOC content	No information available	
Particle characteristics	No information available	

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Hydrofluoric acid.

Hazardous decomposition products

Hazardous decomposition products Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Section 11: Toxicological information

Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms No information available.

Acute toxicity .

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapor)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	99,999.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Crystalline silica, quartz	> 15000 mg/kg (human)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Chemical name	Skin corrosion/irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the skin

Serious eye damage/eye irritation No information available.

Chemical name	Serious eye damage/eye irritation
Crystalline silica, quartz 14808-60-7	Non-irritating to the eye No information available

Respiratory or skin sensitization No information available.

Chemical name	Respiratory sensitization
Crystalline silica, quartz 14808-60-7	No information available

Chemical name	Skin sensitization
Crystalline silica, quartz 14808-60-7	No information available

Germ cell mutagenicity No information available.

Chemical name	Germ cell mutagenicity
Crystalline silica, quartz 14808-60-7	Not regarded as mutagenic.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

Chemical name	Carcinogenicity
Crystalline silica, quartz 14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Crystalline silica, quartz - 14808-60-7	Carc. 1A	-	Group 1

Legend

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans

Reproductive toxicity No information available.

Chemical name	Reproductive toxicity
Crystalline silica, quartz 14808-60-7	No information available

STOT - single exposure No information available.

Chemical name	STOT - single exposure
Crystalline silica, quartz 14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Chemical name	STOT - repeated exposure
Crystalline silica, quartz 14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Aspiration hazard No information available.

Chemical name	Aspiration hazard
Crystalline silica, quartz 14808-60-7	No information available

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity

Unknown aquatic toxicity 1 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Crystalline silica, quartz	EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata)	LL0(96 h)=10000 mg/L (Danio rerio)	-	LL50(24 h)>10000 mg/L (Daphnia magna)

Terrestrial ecotoxicty There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Crystalline silica, quartz 14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation There is no data for this product.

Mobility

Chemical name	Mobility
Crystalline silica, quartz 14808-60-7	No information available

Other adverse effects

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information	Crystalline silica, quartz - 14808-60-7
Contact supplier for inventory compliance status	-		

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

International Inventories

AIIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Any other relevant information

Revision date 10-Jan-2024

Reason for revision Update to Format

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EN 149 - European standard on filtering halfmasks to protect against particles
FFP - Filtering Facepieces
h - hour
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LL50 – Lethal Loading 50%
d - day
Derived No Effect Level (DNEL)
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC – Volatile Organic Carbon
UN – United Nations
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
vPvB – very Persistent and very Bioaccumulative
w/w - weight/weight
Water hazard class (WGK)
UN – United Nations
VOC – Volatile Organic Carbon
TWA - Time-Weighted Average
STEL – Short Term Exposure Limit

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS

Acute Exposure Guideline Level(s) (AEGL(s))
European Chemicals Agency (ECHA) (ECHA_API)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
NIOSH (National Institute for Occupational Safety and Health)

Disclaimer

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information isobtained from various sources including the manufacturer and other third party sources. The information may not be validunder all conditions nor if this material is used in combination with other materials or in any process. Final determination ofsuitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

A. System Details:

Operator:	Buru Energy LTD
Project / Well:	Drilling and Workover Campaign
System:	Cement and Spacer
Total Volume of System (m^3):	Approx. ~635 m^3

B. Product List

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
Retarder D013	Schlumberger	Retarder	0.0935%	Acute Toxicity: LD50 oral >15,000 g/kg (Product). Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: The product component(s) are not classified as environmentally hazardous. Product not considered toxic to algae, or invertebrates or fish Bioaccumulation: no product level data available.	Yes
Antifoam Agent D47	Schlumberger	Antifoam Agent	0.0879%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Aquatic Ecotoxicity: Product is not considered toxic to algae, fish, or invertebrates. Product is readily biodegradable, bioaccumulation is unlikely	Yes
TIC D65 Dispersant	Schlumberger	Dispersant	0.1762%	Acute Toxicity: LD50 Oral: >10000 mg/Kg (Rat), LC50 Inhalation: >2.4 mg/L (Rat) Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Toxicity to Fish: LC50: 3040 mg/L, Toxicity to Invertebrates:2564 mg/L	Yes
Silica Flour D66	Schlumberger	Viscosifier and Fluid Loss Additive	5.5970%	Acute Toxicity: None Chronic Toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC as Group 1 carcinogen. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: This product is not considered toxic to algae, fish, or invertebrates Biodegradation/Bioaccumulation: Not applicable- Inorganic chemical	Yes
Silicate Additive D75	Schlumberger	Extender	2.5037%	Acute Toxicity: None.	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
				Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: The product component(s) are not classified as environmentally hazardous. Product not considered toxic to algae, fish, or invertebrates. Contains no substance considered to be bioaccumulating or toxic	
Cement Liquid Dispersant D80	Schlumberger	Dispersant	0.7606%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Toxic to aquatic life with long lasting effects. Sodium polynaphthalene sulfonate: Toxicity to Fish: EC50 (48 hours) 1.8 mg/l, Toxicity to Invertebrates: LC/50: >100 mg/L Product is not biodegradable. Bioaccumulation is unlikely	Yes
Liquid Retarder D81	Schlumberger	Retarder	0.0922%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: The product component(s) are not classified as environmentally hazardous. Product not considered toxic to algae, fish, or invertebrates. Does not bioaccumulate	Yes
D095 Cement Additive	Schlumberger	Lost Circulation Material	0.1601%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Aquatic Ecotoxicity: Product is not considered toxic to algae, fish, or invertebrates Biodegradation/Bioaccumulation: Not applicable	Yes
Cement Retarder D110	Schlumberger	Retarder	0.0160%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: The product component(s) are not classified as environmentally hazardous. Product not considered toxic to algae, fish, or invertebrates. Product is biodegradable, does not bioaccumulate. Biodegradation/Bioaccumulation: Not applicable	Yes
Anti-Settling Agent D153	Schlumberger	Suspending Agent	0.0813%	Acute Toxicity: None known. Chronic toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC in Group 1 as known to cause	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
				lung cancer in humans, if inhaled. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Product not considered toxic to algae, fish, or invertebrates. Contains no substance considered to be bioaccumulating or toxic. Biodegradation/Bioaccumulation: NA Inorganic Chemical.	
Low-Temperature Liquid Extender D155	Schlumberger	Extender	1.1029%	Acute Toxicity: Fumed Silica LD50 Oral: >5000 mg/kg, LD50 Dermal: > 5000 mg/kg Chronic Toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Fumed Silica: Toxicity to Fish: LC50 >100 mg/L, Toxicity to Algae: LC50 >323 mg/L, Toxicity to invertebrates: LC50 >1003 mg/L Biodegradation/Bioaccumulation: NA inorganic chemical	Yes
UNIFLAC-S D167A	Schlumberger	Crosslinker	2.5536%	Acute Toxicity: 2-methylpropan-2-ol (impurity): LD50 Oral (Rat): = 2200 mg/kg, LD50 Dermal (Rabbit): = 2g/kg, LC50 Inhalation (Rat): >10000 ppm Chronic Toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: 2-methylpropan-2-ol (impurity): Toxicity to Fish: LC50 6130-6700 mg/L, Toxicity to Algae:EC50: >1000 mg/L, Toxicity to invertebrates: = EC50: = 933 mg/L Biodegradation/Bioaccumulation: No product level data available	Yes
UNIFLAC* L D168	Schlumberger	Fluid Loss Additive	0.5567%	Acute Toxicity: None Chronic Toxicity: Product contains no components expected to be sensitizing, mutagenic, or carcinogenic. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Product not considered toxic to algae, fish, or invertebrates Biodegradation/Bioaccumulation: No product level data available	Yes
Antifoam Agent D175A	Schlumberger	Antifoam Agent	0.0473%	Acute Toxicity: Silicone Oil: LD50 Oral (Rat): 24024 mg/kg, Sorbitan stearate: LD50 Oral (Rat): 31000 mg/kg, Polyoxyethylene (40) stearic acid (monoester): LD50 Oral (Rat): 52841 mg/kg, Silicone Dioxide: LD50 Oral (Rat): 7900 mg/kg, LD50 Dermal (Rabbit): 5005 mg/kg. Sorbic Acid: LD50 Oral (Rat): 3200 mg/kg, LD50 Dermal (Rabbit): 2002 mg/kg Chronic toxicity: Product contains components that may be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Silicone Oil: Toxicity to Fish: EC50 >100 mg/L, Toxicity to Algae: LC50 >500 mg/L 24024 mg/kg, Silicone Dioxide Toxicity to Fish: 5000 mg/L, Toxicity to Algae: 440 mg/L, Toxicity to Invertebrates: 7600 mg/L. Sorbic Acid: Toxicity to Fish: 75 mg/L, Toxicity to Invertebrates: 353.54 mg/L Biodegradation/Bioaccumulation: No product level information available	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
MUDPUSH* II Spacer D182	Schlumberger	Spacer	0.1747%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: The product component(s) are not classified as environmentally hazardous. Product not considered toxic to algae, fish, or invertebrates. Bioaccumulation is unlikely.	Yes
Gel Suppressing Agent D606	Schlumberger	Anti-Gel Agent	3.4128%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards Ecotoxicity: Product not considered toxic to algae, fish, or invertebrates. Biodegradation/Bioaccumulation: No product level data available.	Yes
GASBLOK* Gas Migration Control Additive D620	Schlumberger	Additive	0.4734%	Acute Toxicity: Propane-1,2-diol: LD50 Oral (Rat): 20 g/kg, LD50 Dermal (Rabbit): 20,800 mg/kg 2-methyl-2h-isothiazol-3-one: LD50 Oral (Rat): 120 mg/kg, LD50 Dermal (Rabbit): 200 mg/kg, LD50 Inhalation (Rat): 0.11 mg/L (4 hour) Chronic Toxicity: Product may cause an allergic skin reaction. Product contains no known mutagens or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards Ecotoxicity: Propane-1,2-diol: Toxicity to Fish: 47-47 mL/L, Toxicity to Algae: 19,000 mg/L, Toxicity to Invertebrates: >1,000 mg/L Biodegradation/Bioaccumulation: No product level data available	Yes
Cement Class G D907	Schlumberger	Cement	15.9917%	Acute Toxicity: None. Chronic toxicity: Product contains no components known to be mutagens, or carcinogens. Can be come skin sensitizing if stored improperly. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: The product component(s) are not classified as environmentally hazardous. Product not considered toxic to algae, fish, or invertebrates. Biodegradation/Bioaccumulation: Not applicable, inorganic chemical	Yes
Class G - Silica Blend D956	Schlumberger	Cement	32.4236%	Acute Toxicity: None Chronic toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC as Group 1 carcinogen. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Product not considered toxic to algae, fish, or invertebrates. Biodegradation/Bioaccumulation: Inorganic chemical. Product is not biodegradable, does not bioaccumulate	Yes
EZEFLO* F103 Surfactant	Schlumberger	Surfactant	0.2289%	Acute Toxicity: Propan-2-ol: LD50 Oral (Rat): = 1870 mg/kg, LD50 Dermal (Rabbit): =4059 mg/kg,	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
				LC50 Inhalation (Rat) : >10000 ppm 2-butoxyethanol: LD50 Oral (Rat): = 1200 mg/kg, LD50 Dermal (Rat): > 2000 mg/kg, LC50 Inhalation: = 400 ppm Ethoxylated alcohol: LD50 Oral (rat): =1600 mg/kg, LD50 Dermal (Rabbit): = 2500 mg/kg 1-undecanol (impurity): LD50 Oral (Rat): = 3 g/kg, LD50 Dermal (Rat): > 5g/kg, LC50 Inhalation: > 0.58 ppm Chronic Toxicity: Product contains no components known to be sensitizing, mutagens or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Propan-2-ol: Toxicity to Fish = 9640 mg/L, Toxicity to Algae: 1000 mg/L, Toxicity to Invertebrates: = 13299 g/L 2-butoxyethanol: Toxicity to Fish: = 1490 mg/L, Toxicity to Invertebrates: = 1698-1940 mg/L 1-undecanol (impurity) : Toxicity to Fish: = 1.04 mg/L, Toxicity to Algae: 2.7 mg/L, Toxicity to Invertebrates: 4.78 - 8.87 mg/L Biodegradation/Bioaccumulation: No product level data available. Components are readily biodegradable, not expected to bioaccumulate	
EZEFLO* F110 Surfactant	Schlumberger	Surfactant	0.2283%	Acute Toxicity: Methanol: LD50 Oral (Rat): = 6200 mg/kg, LD50 Dermal (Rabbit): =15840 mg/kg, LC50 Inhalation (Rat): = 22500 ppm 8 hours Alcohol, C9-C11, ethoxylated: LD50 Oral (rat): =1400 mg/kg, LD50 Dermal (Rabbit): = >2 g/kg Chronic Toxicity: Product contains no components known to be sensitizing, mutagens or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Harmful to aquatic life with long-lasting effects Methanol: Toxicity to Fish: = >100 mg/L, Toxicity to Algae: = 22000 Toxicity to Invertebrates: > 10000 mg/L Ethoxylated C11 alcohol : Toxicity to Algae: 3.4 mg/L Biodegradation/Bioaccumulation: No product level data available. Components are readily biodegradable, not expected to bioaccumulate	Yes
Calcium Chloride S1	Schlumberger	Accelerator	0.9858%	Acute Toxicity: Calcium Chloride: LD50 Oral (Rat): = 1000 mg/kg, LD50 Dermal (Rabbit): >5000 mg/kg Chronic toxicity: Product contains no components known to be sensitizing, mutagens, or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Calcium Chloride: Toxicity to Fish: LC50: = 10650 mg/L, Toxicity to Invertebrates:	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
				EC50 >2400 mg/L Biodegradation/Bioaccumulation: Not applicable- Inorganic chemical.	
Mutual Solvent U66	Schlumberger	Mutual Solvent	0.3279%	Acute Toxicity: 2-butoxyethanol: LD50 Oral (Guinea pigs): = 1200 mg/kg, LD50 Dermal (Rat): > 2000 mg/kg, LC50 Inhalation (Rabbit): = 400 ppm Chronic Toxicity: Product contains no components known to be sensitizing, mutagens or carcinogens. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: 2-butoxyethanol: Toxicity to Fish: = 1490 mg/L, Toxicity to Invertebrates: = 1698-1940 mg/L Biodegradation/Bioaccumulation: Readily biodegradable, not likely to bioaccumulate	Yes
Water	Schlumberger	Water	31.9236%	NA	NA
Total			**100.0%**		

The total volume listed in the tables above represents the summation of water and additives. Water is supplied by client.

C. Chemical List

CAS Number	Chemical Name	Mass %
65997-15-1	Portland Cement Clinker	38.54863%
14808-60-7	Respirable Crystalline Silica (Quartz)	17.83483%
7732-18-5	Water (Including Mix Water Supplied by Client)*	32.22686%
7757-82-6	Sodium sulfate (Impurity)	3.45939%
7778-18-9	Sulfuric acid, calcium salt	1.81643%
110897-64-8	Vinylamide/vinylsulfonated polymer	1.52311%
1344-09-8	Silicic acid, sodium salt	0.96042%
10043-52-4	Calcium chloride (Impurity)	0.77631%
69012-64-2	Fumed silica	0.55672%
111-76-2	2-butoxyethanol	0.37725%
9008-63-3	Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	0.21274%
65997-17-3	Glass oxide	0.16066%
26591-53-7	2-Propenamide, N-(hydroxymethyl)-,polymer with 1,3-Butafiene and ethylbenzene	0.15294%

CAS Number	Chemical Name	Mass %
8061-52-7	Calcium lignosulfonate	0.13343%
13780-06-8	Calcium nitrite	0.12570%
10124-37-5	Calcium nitrate	0.12570%
40104-76-5	Sulfurous acid, monosodium salt, polymer	0.11764%
1857271-55-6	2-Propenoic acid, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid and 2-propenamide, ammonium salt.	0.10331%
25322-69-4	Polypropylene glycol	0.08875%
75-65-0	2-methylpropan-2-ol (impurity)	0.08450%
7647-14-5	Sodium chloride (impurity)	0.07763%
34398-01-1	Ethoxylated C11 Alcohol	0.07698%
67-56-1	Methanol	0.06914%
72121-88-1	Polysaccharide biopolymer	0.06694%
110897-64-8	1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, monoammonium salt, polymer with 2-propenamide	0.05563%
67-63-0	Propan-2-ol	0.04622%
7447-40-7	Potassium chloride (impurity)	0.04578%
111-46-6	2,2' -oxydiethanol	0.03141%
68439-46-3	Alcohol, C9-C11, Ethoxylated	0.02304%
68131-39-5	Ethoxylated Alcohol	0.02304%
57-55-6	Propane-1,2-diol	0.02008%
63148-62-9	Dimethyl siloxanes and silicones	0.01333%
7789-41-5	Calcium Bromide	0.01257%
68891-38-3	POLY(OXY- 1,2-ETHANEDIYL), .ALPHA.-SULFO-.OMEGA.-HYDROXY-, C12-C14-ALKYL ETHERS, SODIUM SALTS	0.01147%
105-59-9	2,2'-Methyliminodiethanol	0.00945%
69011-36-5	Isotridecanol, ethoxylated	0.00473%
70955-07-6	Alcohols, tallow, propoxylated	0.00382%
112-42-5	1-undecanol (impurity)	0.00370%
17140-60-2	Calcium glucoheptonate	0.00343%
1338-41-6	Sorbitan stearate	0.00330%
79-06-1	2-Propenamid (impurity)	0.00246%

CAS Number	Chemical Name	Mass %
9084-06-4	Sodium poly[(naphthaleneformaldehyde)sulfonate]	0.00215%
51668-30-5	Oxirane, methyl-, polymer with oxirane, octadecanoate	0.00191%
9004-99-3	Polyoxyethylene (40) stearic acid (monoester)	0.00148%
112926-00-8	Silica gel, pptd., cryst.-free	0.00139%
7631-86-9	Silicon Dioxide	0.00101%
Not Applicable	Surface sizing treatment	0.00097%
64787-97-9	Sulfurous acid, monosodium salt, polymer with formaldehyde and 1,3,5-triazine-2,4,6-triamine	0.00057%
25322-68-3	Poly(oxy-1,2-ethanediyl),a-hydro-w-hydroxy- Ethane-1,2-diol, ethoxylated	0.00053%
127-08-2	Acetic acid, potassium salt (impurity)	0.00016%
2634-33-5	1,2-benzisothiazolin-3-one	0.00012%
66204-44-2	3,3'-methylenebis[5-methyloxazolidine]	0.00010%
110-44-1	Sorbic acid	0.00005%
2682-20-4	2-methyl-2h-isothiazol-3-one	0.00004%
64-19-7	Acetic acid (impurity)	0.00004%
55965-84-9	5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	0.00001%
4403-90-1	Benzenesulfonic acid, 2,2'-[(9,10-dihydro-9,10-dioxo-1,4-anthracenediyl)diimino]bis[5-methyl-, disodium salt (acid Green 25)	0.00001%
106-99-0	1,3-Butadiene	0.00001%
100-42-5	Styrene (impurity)	0.00001%
50-00-0	Formaldehyde (impurity)	< 0.00001%
	TOTAL	**100 %**

* Mix water is supplied by the client.

SDS no. D047
Version 3
Revision date 03-Mar-2021
Supersedes Date: 21-Feb-2016

Safety Data Sheet
Antifoam Agent D47

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Antifoam Agent D47
Product code D047

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Antifoam in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Harmful organic chemical fumes.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Avoid contact with: Strong acids Strong bases Strong oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	The product does not contain any hazardous materials with occupational exposure limits established.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Repeated or prolonged contact Use protective gloves made of: Butyl Gloves-Neoprene, Nitrile Unless Specified Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces,

respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Viscous
Odor	Odorless
Color	Colorless
Odor threshold	Not applicable

Property	**Values**	**Remarks**
pH	No data available	
pH @ dilution	No information available	
Melting / freezing point	< -35 °C / -31 °F	
Boiling point/range	No information available	
Flash point	229 °C / 444.2 °F	ASTM D-93
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not applicable	
Flammability Limit in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	Not applicable	
Vapor density	No information available	
Specific gravity	1	
Bulk density	No information available	
Relative density	1	@ 21.1°C.
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	414 - 496 cst	
Dynamic viscosity	No information available	
log Pow	Not determined	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	<0°C/32°F
Molecular weight	No information available

VOC content(%)	None
Density	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid excessive heat for prolonged periods of time.

10.5 Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	None known.
Routes of entry	No route of entry noted.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.
Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological Information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

12.4 Mobility

Mobility
The product is insoluble and floats on water.

Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	21-Feb-2016
Revision date	03-Mar-2021
Version	3
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	B

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SDS no. D175A
Version 5
Revision date 07-Feb-2022
Supersedes Date: 29-Apr-2020

Safety Data Sheet
Antifoam Agent D175A

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Antifoam Agent D175A
Product code D175A

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin sensitization	Category 1
Carcinogenicity	Category 1B

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H317 - May cause an allergic skin reaction
H350 - May cause cancer

Precautionary statements
P201 - Obtain special instructions before use
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves and eye/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P202 - Do not handle until all safety precautions have been read and understood
P272 - Contaminated work clothing should not be allowed out of the workplace
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse

Contains
Silicon Dioxide

3,3''-methylenebis[5-methyloxazolidine]

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Silicon Dioxide	231-545-4	7631-86-9	1-5
3,3''-methylenebis[5-methyloxazolidine]	266-235-8	66204-44-2	<1

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Silicon oxide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Solutions extremely slippery when spilled.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep at a temperature not exceeding 25 °C Avoid contact with: Strong oxidizing agents UV or Ionising Radiation. Steel
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

Component Information

Chemical Name	Arabic	Australia	Egypt
Silicon Dioxide	Not determined	2mg/m³TWArespirable dust 10mg/m³TWAinhalable	Not determined
3,3''-methylenebis[5-methyloxazolidine]	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Silicon Dioxide	10 mg/m³ TWA	Not determined	Not determined
3,3''-methylenebis[5-methyloxazolidine]	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Silicon Dioxide	1 mg/m³ MAC	6.0 mg/m³ TWA	Not determined
3,3''-methylenebis[5-methyloxazolidine]	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Silicon Dioxide	Not determined	Not determined	1 mg/m³ TWA 2 mg/m³ TWA 3 mg/m³ MAC 6 mg/m³ MAC Fibrogenic substance in the form of condensation aerosol, containing >60% Silicon dioxide;limit is for total mass of aerosols 1151 Fibrogenic substance in the form of condensation aerosol, containing 10-60% Silicon dioxide;limit is for total mass of aerosols 1152 Fibrogenic substance also vitreous, in the form of disintegration aerosol;limit is for total mass of aerosols 1153
3,3''-methylenebis[5-methyloxazolidine]	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Silicon Dioxide	Not determined	Not determined	Not determined
3,3''-methylenebis[5-methyloxazolidine]	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene Nitrile Butyl Rubber
Break through time >480 minutes
Glove thickness >0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment Respirator with

	combination filter for vapor/particulate Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Odor	Slight
Color	Milky white

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	7	concentrated solution
Melting / freezing point	~ 0 °C / 32 °F	
Boiling point/range	100 °C / 212 °F	
Flash point	> 100 °C / > 212 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	~ 1	@ 25 °C
Bulk density	No information available	
Water solubility	Dispersible	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	~ 100 mPa s	@ 25 °C
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available

Molecular weight No information available
VOC content(%) None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

Strong oxidizing agents. UV or Ionising Radiation. Steel.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact May cause an allergic skin reaction.

Ingestion Ingestion may cause stomach discomfort.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Silicon Dioxide	= 7900 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 58.8 mg/L (Rat) 4 h
3,3''-methylenebis[5-methyloxazolidine]	900 mg/kg, Rat	2 mg/l, 4 h, Rat, dust/mist, OECD Test Guideline 436	1207 - 1620 mg/kg, Rat, OECD Test Guideline 402

Sensitization May cause allergic skin reaction.

Mutagenic effects Contains an known or suspected mutagen.

Carcinogenicity Contains a known or suspected carcinogen.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Skin contact. Inhalation. Ingestion. Eye contact.

Routes of entry Skin contact. Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Silicon Dioxide	= 5000 mg/L LC50 Brachydanio rerio 96 h	= 440 mg/L EC50 Pseudokirchneriella subcapitata 72 h	= 7600 mg/L EC50 Ceriodaphnia dubia 48 h
3,3''-methylenebis[5-methyloxazolidine]	57.7 mg/l LC 50 Brachidanio rerio (Zebra Fish) 96 h	5,7 mg/l, 72 h	37.9 mg/l EC50 Daphnia Magna (Big water flea) 48 h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Silicon Dioxide	Not Applicable - Inorganic chemical.
3,3''-methylenebis[5-methyloxazolidine]	Readily biodegradable OECD 306

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Silicon Dioxide	Not likely to bioaccumulate
3,3''-methylenebis[5-methyloxazolidine]	Not likely to bioaccumulate log Pow ca. -0,3 (25 °C), Directive 92/69/EEC, A.8

12.4 Mobility

Mobility
Dispersible in water. See component information below.

Chemical Name	Mobility
3,3''-methylenebis[5-methyloxazolidine]	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
3,3''-methylenebis[5-methyloxazolidine]	Distribution among environmental compartments

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions

Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020
HSNO approval no.	HSR002512
Group number	6.5B, 6.7A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	29-Apr-2020
Revision date	07-Feb-2022
Version	5

This SDS has been revised in the following section(s) All sections There have been changes with regard to classification.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2 *
Flammability	1
Physical hazard	0
PPE	X

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SDS no. D153
Version 4
Revision date 23-Feb-2022
Supersedes Date: 28-Mar-2018

Safety Data Sheet
Anti-Settling Agent D153

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Anti-Settling Agent D153
Product code D153
Country Limitations Japan : Contact GRC-C for further information.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Specific target organ toxicity - Repeated exposure	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

_

Contains
Quartz, Crystalline silica

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Quartz, Crystalline silica	238-878-4	14808-60-7	60 - 100
Respirable Crystalline Silica (Quartz)	238-878-4	14808-60-7	<10

Comments
The product contains other ingredients which do not contribute to the overall classification.
IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover with plastic sheet to prevent spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Hydrofluoric acid (HF) Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Quartz, Crystalline silica	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Quartz, Crystalline silica	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Quartz, Crystalline silica	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Quartz, Crystalline silica	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC

			Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Quartz, Crystalline silica	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile
Break through time >480 minutes
Glove thickness >0.4 mm
Frequent change is advisable

Respiratory protection In case of inadequate ventilation wear respiratory protection Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odor	Odorless
Color	White

Property	Values	Remarks
pH	No information available	
pH @ dilution	6 - 9	@ 20g/l
Melting / freezing point	No information available	
Boiling point/range	Not applicable	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.65	
Bulk density	1100 - 1600 kg/m^3	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Hydrofluoric acid (HF). Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause damage to organs through prolonged or repeated exposure. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

Eye contact Dust may cause mechanical irritation.

Skin contact Repeated exposure may cause skin dryness or cracking.

Ingestion Ingestion may cause stomach discomfort. May cause additional affects as listed under "Inhalation".

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Quartz, Crystalline silica	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact. Eye contact.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Category 2.

Target organ effects Respiratory system. Lungs.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Quartz, Crystalline silica	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Quartz, Crystalline silica	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Quartz, Crystalline silica	Product/Substance is inorganic

12.4 Mobility

Mobility
The product is insoluble and sinks in water. See component information below.

Chemical Name	Mobility
Quartz, Crystalline silica	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Quartz, Crystalline silica	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused Dispose of in accordance with local regulations.

products

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies - Volume restriction.
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	28-Mar-2018
Revision date	23-Feb-2022
Version	4
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

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SDS no. S001
Version 4
Revision date 22-Mar-2023
Supersedes Date: 09-Oct-2018

Safety Data Sheet
Calcium Chloride S1

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Calcium Chloride S1
Product code S001

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Calcium chloride

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Calcium chloride	233-140-8	10043-52-4	60 - 100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Nitrogen oxides (NOx), Hydrogen chloride, Chlorine, May release hydrogen gas (explosive) on contact with metals.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Avoid generating or breathing dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Protect from moisture Avoid contact with: Oxidizing agents Acids Bases Reducing Agents Metals

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Calcium chloride	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Calcium chloride	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Calcium chloride	2 mg/m^3 MAC	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**

Calcium chloride	Not determined	Not determined	2 mg/m³ MAC (aerosol)
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Calcium chloride	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Rubber Frequent change is advisable

Respiratory protection No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Effective dust mask. Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing and gloves Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state Solid
Appearance Granules
Odor Odorless
Color White

Property	Values	Remarks
pH	No information available	
pH @ dilution	7 - 10	5% sol.
Melting / freezing point	No information available	
Boiling point/range	> 1600 °C / > 2912 °F	
Flash point	Not applicable	

Evaporation rate (BuAc =1)	No information available
Flammability	Not applicable
Explosion limits:	
Upper explosion limit	No information available
Lower explosion limit	No information available
Vapor pressure	No information available
Relative Vapor Density	No information available
Specific gravity	1.85 - 2.20
Bulk density	No information available
Water solubility	Soluble in water
Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	> 772°C / 1421.6°F
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid contact with water and moist air - product is hygroscopic. Avoid excessive heat for prolonged periods of time. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Oxidizing agents. Acids. Bases. Reducing agents. Metals.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Eye contact Causes serious eye irritation.

Skin contact May cause skin irritation and/or dermatitis.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Calcium chloride	= 1000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Eye contact.

Routes of entry Inhalation. Eye contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Calcium chloride	= 10650 mg/L LC50 Lepomis macrochirus 96 h	No information available	2,400 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Calcium chloride	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Calcium chloride	Inorganic compound

12.4 Mobility

Mobility
See component information below.

Chemical Name	Mobility
Calcium chloride	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Calcium chloride	After release, disperses through ground water

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	6.4A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies

Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	09-Oct-2018
Revision date	22-Mar-2023
Version	4
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	0
Physical hazard	0
PPE	E

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Safety Data Sheet

Cement Class G D907

Revision date 12-Jan-2023 **Supersedes Date:** 11-Oct-2018 **Version** 7

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Cement Class G D907
Product code D907
Country Limitations This SDS is not for use in the European Union (EU).

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Sub-Category 1B
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Precautionary statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Portland Cement Clinker

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Portland Cement Clinker	266-043-4	65997-15-1	60-100

Comments

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Immediate medical attention is required.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas

(SiF4).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid dust formation. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Avoid contact with the skin and the eyes.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors/dust. Avoid contact with skin and eyes. Avoid handling causing generation of dust. May cause sensitization of susceptible persons.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Store away from incompatibles, Powdered aluminum Acids Oxidizing agents Hydrofluoric acid (HF)

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component Information

Chemical Name	**Arabic**	**Australia**	**Egypt**
Portland Cement Clinker	10 mg/m³ TWA	10 mg/m³ TWA	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Portland Cement Clinker	10 mg/m³ TWA	1 mg/m³ TWA	4 mg/m³ OEL 1 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Portland Cement Clinker	Not determined	10.0 mg/m³ TWA 5.0 mg/m³ TWA	3 mg/m³ TWA 1 mg/m³ TWA dermal sensitiser
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Portland Cement Clinker	10 mg/m³ TWA	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Portland Cement Clinker	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Wear chemical splash goggles and face shield

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: PVC disposable gloves Rubber gloves Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Gray or White
Odor	Odorless

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	11 - 13	@10% sol
Melting / freezing point	> 1250 °C / 2282 °F	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	Not applicable	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	~ 3	
Bulk density	0.9 - 1.5 g/cm³	
Water solubility	0.1-1.5 g/L @ 20 °C	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	2.75 - 3.20	
Explosive properties	Not applicable	
Oxidizing properties	Not applicable	

9.2 Other information

Pour point	No information available
Molecular weight	No information available

VOC content(%) Not applicable

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid dust formation.

10.5 Incompatible materials

Acids. Powdered aluminum. Hydrofluoric acid (HF). Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause respiratory irritation. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Eye contact Causes serious eye damage.

Skin contact Causes skin irritation. May cause an allergic skin reaction.

Ingestion Ingestion may cause irritation to mucous membranes.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Portland Cement Clinker	No data available	No data available	No data available

Sensitization May cause allergic skin reaction.

Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation. Eye contact. Ingestion. Skin contact.
Routes of entry	Inhalation. Eye contact. Ingestion. Skin contact.
Specific target organ toxicity - Single exposure	Category 3
Specific target organ toxicity - Repeated exposure	Not classified.
Target organ effects	Respiratory system. Lungs.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Portland Cement Clinker	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

Chemical Name	Persistence and degradability
Portland Cement Clinker	Inorganic compound

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

Chemical Name	Bioaccumulation
Portland Cement Clinker	Product/Substance is inorganic

12.4 Mobility

Mobility
Slightly soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
None

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Portland Cement Clinker
Schedule 4
Schedule 6
Schedule 5

New Zealand Hazard Classification Construction Products (Subsidiary Hazard) Group Standard 2020

HSNO approval no. HSR002544

Group number 6.1E, 6.3A, 6.5B, 8.3A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong

Supersedes Date:	11-Oct-2018
Revision date	12-Jan-2023
Version	7
This SDS has been revised in the following section(s)	No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3 *
Flammability	1
Physical hazard	0
PPE	E

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SDS no. D080
Version 5
Revision date 14-Apr-2022
Supersedes Date: 10-Feb-2021

Safety Data Sheet
Cement Liquid Dispersant D80

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Cement Liquid Dispersant D80
Product code D080

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards

Chronic aquatic toxicity	Category 2

Physical Hazards Not classified

2.2 Label elements



Signal word
None

Hazard Statements
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements
P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

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Contains
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.
Classified as Hazardous according to the criteria of NOHSC.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	Polymer	9008-63-3	30-60

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG 3Z

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13). After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Do not eat, drink or smoke when using this product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Do not freeze Store above 0°C Avoid contact with: Oxidizing agents Acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits The product does not contain any hazardous materials with occupational exposure limits established.

Component Information

Chemical Name	Arabic	Australia	Egypt
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	Not determined	Not determined	Not determined

Chemical Name	Kazakhstan	Kuwait	New Zealand
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Wear chemical resistant gloves such as nitrile or neoprene.
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state Liquid
Appearance Opaque
Odor Pungent

Color	Dark brown

Property	**Values**	**Remarks**
pH	6 - 8	
pH @ dilution	No information available	
Melting / freezing point	-2 °C / 28 °F	
Boiling point/range	100 °C / 212 °F	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	>1 (air = 1)	
Specific gravity	1.2 g/cm3	20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	60 mPa s	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Do not freeze. Store above 0°C.

10.5 Incompatible materials

Oxidizing agents. Acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure None known.

Routes of entry No route of entry noted.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Neurological effects None known.

Target organ effects None known.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects

Toxicity to algae
EC50 1.8 mg/l Skeletonema Costatum 48 h.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
LC50 > 100 mg/l Acartia tonsa 48 h.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde	No information available	No information available	No information available

12.2 Persistence and degradability

Product is not biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

. .

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN3082
UN No. (IMDG/ANTAQ)	UN3082
UN No. (ICAO/ANAC)	UN3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Sodium polynaphthalene sulfonate)

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	9
IMDG/ANTAQ Hazard class	9
ICAO/ANAC Hazard class/division	9

14.4 Packing group

ADR/RID/ADN/ADG Packing group	III
IMDG/ANTAQ Packing group	III
ICAO/ANAC Packing group	III



14.5 Environmental hazard

Yes

14.6 Special precautions

Hazard identification no (ADR)	90
EmS (IMDG)	F-A, S-F
Emergency Action Code (EAC)	3Z
Tunnel restriction code	(-)
Hazchem code ADG	3Z

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Construction Products (Subsidiary Hazard) Group Standard 2020

HSNO approval no. HSR002544

Group number 9.1B

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	10-Feb-2021
Revision date	14-Apr-2022
Version	5
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	B

Disclaimer
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SDS no. D110
Version 6
Revision date 14-Apr-2023
Supersedes Date: 08-Sep-2022

Safety Data Sheet
Cement Retarder D110

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Cement Retarder D110
Product code D110

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Do not freeze Store above 0°C Store away from incompatibles, Strong oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	Contains no substances with occupational exposure limit values

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Rubber Break through time >480 minutes Glove thickness 0.5 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 In case of insufficient ventilation, wear suitable respiratory equipment
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Opaque
Odor	Sweet
Color	Brown

Property	**Values**	**Remarks**
pH	6 - 9	
pH @ dilution	No information available	
Melting / freezing point	-4 °C / 24.8 °F	
Boiling point/range	100 °C / 212 °F	
Flash point	> 100 °C / > 212 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	>242°C / >467.6 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	1.5 cSt	@ 40 °C
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	1.125 - 1.141 g/mL @ 25°C.	
Explosive properties	None known	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Do not freeze. Store above 0°C.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	None known.
Routes of entry	No route of entry noted.

Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
The product is water soluble, and may spread in water systems.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08-Sep-2022
Revision date	14-Apr-2023
Version	6
This SDS has been revised in the following section(s)	15. Regulatory Information No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	E

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SDS no. D956
Version 7
Revision date 31-Aug-2023
Supersedes Date: 11-Oct-2018

Safety Data Sheet
Class G - Silica Blend D956

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Class G - Silica Blend D956
Product code D956
Chemical name This SDS is only for use in New Zealand and Australia

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1B
Carcinogenicity	Category 1A
Specific target organ toxicity - Single exposure	Category 3
Specific target organ toxicity - Repeated exposure	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements
P201 - Obtain special instructions before use
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Supplementary precautionary statements
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Portland Cement Clinker

Quartz, Crystalline silica

Respirable Crystalline Silica (Quartz)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Portland Cement Clinker	266-043-4	65997-15-1	60-100
Quartz, Crystalline silica	238-878-4	14808-60-7	30-60
Respirable Crystalline Silica (Quartz)	238-878-4	14808-60-7	<3

Comments
IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention at once.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Use personal protection equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors/dust. Avoid contact with skin and eyes. Avoid handling causing generation of dust. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat or drink Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Store away from incompatibles, Powdered aluminum Acids Oxidizing agents Hydrofluoric acid (HF)

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Portland Cement Clinker	10 mg/m³ TWA	10 mg/m³ TWA	Not determined
Quartz, Crystalline silica	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Respirable Crystalline Silica (Quartz)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Portland Cement Clinker	10 mg/m³ TWA	1 mg/m³ TWA	4 mg/m³ OEL 1 mg/m³ OEL
Quartz, Crystalline silica	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Respirable Crystalline Silica (Quartz)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Portland Cement Clinker	Not determined	10.0 mg/m³ TWA 5.0 mg/m³ TWA	3 mg/m³ TWA 1 mg/m³ TWA dermal sensitiser
Quartz, Crystalline silica	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Respirable Crystalline Silica (Quartz)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Portland Cement Clinker	10 mg/m³ TWA	Not determined	Not determined
Quartz, Crystalline silica	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Respirable Crystalline Silica (Quartz)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Portland Cement Clinker	Not determined	Not determined	Not determined

Quartz, Crystalline silica	0.025 mg/m³ TWA	Not determined	Not determined
Respirable Crystalline Silica (Quartz)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed Keep airborne concentrations below exposure limits

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against powders and dusts
Wear chemical splash goggles and face shield

Hand protection
Wear gloves according to EN 374 to protect against skin effects from powders
Impervious gloves made of: Neoprene Nitrile
Frequent change is advisable

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before breaks and immediately after handling the product



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Gray
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	11.0 - 13.5	
Melting / freezing point	> 1250 °C / 2282 °F	
Boiling point/range	No information available	
Flash point	Not applicable	

Evaporation rate (BuAc =1)	No information available
Flammability	Not applicable
Explosion limits:	
Upper explosion limit	No information available
Lower explosion limit	No information available
Vapor pressure	No information available
Relative Vapor Density	No information available
Specific gravity	No information available
Bulk density	0.9 - 1.5 g/cm³
Water solubility	Slightly soluble in water.
Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	2.75 - 3.20
Explosive properties	Not applicable
Oxidizing properties	Not applicable

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	Not applicable

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid dust formation.

10.5 Incompatible materials

Powdered aluminum. Acids. Strong oxidizing agents. Hydrofluoric acid (HF).

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

Inhalation May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns.

Eye contact Causes serious eye damage.

Skin contact Causes skin irritation. May cause an allergic skin reaction. May cause pain, redness, discomfort. Repeated exposure may cause skin dryness or cracking.

Ingestion Ingestion may cause irritation to mucous membranes.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Portland Cement Clinker	No data available	No data available	No data available
Quartz, Crystalline silica	No data available	No data available	No data available
Respirable Crystalline Silica (Quartz)	No data available	No data available	No data available

Sensitization May cause allergic skin reaction.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Eye contact. Skin contact. Ingestion.

Routes of entry Inhalation. Skin contact. Eye contact. Ingestion.

Specific target organ toxicity - Single exposure Category 3

Specific target organ toxicity - Repeated exposure Category 1.

Target organ effects Respiratory system. Lungs.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Large amounts will affect pH and harm aquatic organisms

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Portland Cement Clinker	No information available	No information available	No information available
Quartz, Crystalline silica	No information available	No information available	No information available
Respirable Crystalline Silica (Quartz)	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Portland Cement Clinker	Inorganic compound
Quartz, Crystalline silica	Inorganic compound
Respirable Crystalline Silica (Quartz)	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Portland Cement Clinker	Product/Substance is inorganic
Quartz, Crystalline silica	Product/Substance is inorganic
Respirable Crystalline Silica (Quartz)	Product/Substance is inorganic

12.4 Mobility

Mobility
Slightly soluble in water. See component information below.

Chemical Name	Mobility
Quartz, Crystalline silica	Insoluble in water
Respirable Crystalline Silica (Quartz)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Quartz, Crystalline silica	Not expected to adsorb on soil
Respirable Crystalline Silica (Quartz)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Portland Cement Clinker
Schedule 4
Schedule 6
Schedule 5

New Zealand Hazard Classification Construction Products (Carcinogenic) Group Standard 2020

HSNO approval no.	HSR002545
Group number	6.3A, 8.3A, 6.5B, 6.1E, 6.7A, 6.9A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

This SDS is only for use in New Zealand and Australia

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	11-Oct-2018
Revision date	31-Aug-2023
Version	7
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3*
Flammability	1
Physical hazard	0
PPE	X

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information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.
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SDS no. D095
Version 6
Revision date 26-Jan-2023
Supersedes Date: 30-May-2018

Safety Data Sheet
D095 Cement Additive

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name D095 Cement Additive
Product code D095

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components
2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures Not applicable

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

Eye Contact Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Avoid generating or breathing dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Do not eat, drink or smoke when using this product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile PVC Rubber Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product Remove and wash

contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Fibers
Odor	Odorless
Color	White

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	> 800 °C / 1500 °F	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	Not applicable	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.6	20 °C
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	None known	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation. Skin contact. Eye contact.
Routes of entry	Inhalation.
Specific target organ toxicity -	Not classified

Single exposure
Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Not applicable.

12.3 Bioaccumulative potential

Not applicable.

12.4 Mobility

Mobility
The product is insoluble and sinks in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by

Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Exempt
Canada (DSL)	Exempt
Philippines (PICCS)	Exempt
Japan (ENCS)	Exempt
China (IECSC)	Exempt
Australia (AICS)	Exempt
Korean (KECL)	Exempt
New Zealand (NZIoC)	Exempt

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	30-May-2018
Revision date	26-Jan-2023
Version	6
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	B

Disclaimer
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SDS no. F103
Version 4
Revision date 02-Mar-2022
Supersedes Date: 13-Apr-2017

Safety Data Sheet
EZEFLO* F103 Surfactant

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name EZEFLO* F103 Surfactant
Product code F103

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Surfactant in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards

Flammable Liquids	Category 3

2.2 Label elements



Signal word
DANGER

Hazard Statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness
H226 - Flammable liquid and vapor

Precautionary statements
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or regular foam to extinguish

Supplementary precautionary statements
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Propan-2-ol

2-butoxyethanol

Ethoxylated C11 Alcohol

Ethoxylated Alcohol

1-undecanol (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Propan-2-ol	200-661-7	67-63-0	10 - 30
2-butoxyethanol	203-905-0	111-76-2	10 - 30
Ethoxylated C11 Alcohol	-	34398-01-1	10-30
Ethoxylated Alcohol	-	68131-39-5	5-10
1-undecanol (impurity)	203-970-5	112-42-5	1-<3

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, begin artificial respiration. Seek medical attention at once.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye Contact Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or regular foam to extinguish.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
FLAMMABLE LIQUID AND VAPOR. Vapors are heavier than air and may spread along floors. Vapors may travel considerable distance to source of ignition and flash back. Heating of containers may cause pressure rise, with risk of bursting.

Hazardous combustion products
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG •3Y

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Take precautionary measures against static discharges. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Use clean non-sparking tools to collect absorbed material. Ground and bond containers when transferring material. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Ensure all equipment is electrically grounded before beginning transfer operations.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Keep away from open flames, hot surfaces and sources of ignition Protect from freezing Store above 0°C Store away from incompatibles, Strong oxidizing agents Strong bases Aluminum

Storage class Flammable liquid storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Propan-2-ol	500 ppm STEL 1230 mg/m³ STEL 400 ppm TWA 983 mg/m³ TWA	500ppmSTEL 1230mg/m³STEL 400ppmTWA 983mg/m³TWA	500 ppm STEL 1230 mg/m³ STEL 400 ppm TWA 983 mg/m³ TWA
2-butoxyethanol	25 ppm TWA 121 mg/m³ TWA	50ppmSTEL 242mg/m³STEL 20ppmTWA 96.9mg/m³TWA	Not determined
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Ethoxylated Alcohol	Not determined	Not determined	Not determined
1-undecanol (impurity)	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Propan-2-ol	Not determined	400 ppm TWA 983 mg/m³ TWA 500 ppm STEL 1230 mg/m³ STEL	400 ppm Ceiling 980 mg/m³ Ceiling 200 ppm ACL
2-butoxyethanol	Not determined	20 ppm TWA	20 ppm Ceiling 97 mg/m³ Ceiling May cause substantial skin absorption 25 ppm ACL
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Ethoxylated Alcohol	Not determined	Not determined	Not determined
1-undecanol (impurity)	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**

Propan-2-ol	Not determined	980 mg/m³ TWA 100 ppm TWA 1225 mg/m³ STEL 500 ppm STEL	500 ppm STEL 1230 mg/m³ STEL 400 ppm TWA 983 mg/m³ TWA
2-butoxyethanol	5 mg/m³ MAC	Not determined	25 ppm TWA 121 mg/m³ TWA Possibility of significant uptake through the skin*1)
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Ethoxylated Alcohol	Not determined	Not determined	Not determined
1-undecanol (impurity)	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Propan-2-ol	400 ppm TWA 983 mg/m³ TWA	400 ppm TWA 980 mg/m³ TWA	10 mg/m³ TWA 50 mg/m³ MAC
2-butoxyethanol	20 ppm TWA 96.7 mg/m³ TWA Skin notation*3)	skin - potential for cutaneous absorption 50 ppm TWA 240 mg/m³ TWA	5 mg/m³ MAC
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Ethoxylated Alcohol	Not determined	Not determined	Not determined
1-undecanol (impurity)	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Propan-2-ol	400 ppm TWA	Not determined	Not determined
2-butoxyethanol	50 ppm TWA	Not determined	50 ppm STEL 246 mg/m³ STEL Skin*2) 20 ppm TWA 98 mg/m³ TWA
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Ethoxylated Alcohol	Not determined	Not determined	Not determined
1-undecanol (impurity)	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes
Chemical splash goggles and/or face shield

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: PVC polyvinyl alcohol or nitrile-butyl rubber gloves
Break through time >480 minutes
Glove thickness 0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor/acid gas protection (E, yellow) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Odor	Alcohol
Color	Clear

Property	**Values**	**Remarks**
pH	5	
pH @ dilution	No information available	
Melting / freezing point	- 40 °C / - 40 °F	
Boiling point/range	88 °C / 190 °F	
Flash point	32 °C / 90 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	12.7%	
Lower explosion limit	2%	
Vapor pressure	3.4 kPa	@ 25 °C
Relative Vapor Density	>1 (air = 1)	
Specific gravity	0.925 - 0.96	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	5.63 mm2/s	@ 40 °C
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties Vapours may form explosive mixtures with air
Oxidizing properties None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

FLAMMABLE LIQUID AND VAPOR.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Keep away from direct sunlight. Protect from freezing. Store above 0°C.

10.5 Incompatible materials

Strong oxidizing agents. Strong bases. Aluminum.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Vapors may irritate throat and respiratory system. May cause drowsiness or dizziness. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.

Eye contact Causes serious eye damage.

Skin contact Causes skin irritation. May be absorbed through the skin in harmful amounts.

Ingestion Harmful if swallowed. May cause additional affects as listed under "Inhalation".

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Propan-2-ol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	> 10000 ppm (Rat) 6 h
2-butoxyethanol	1200 mg/kg (Guinea pigs)	> 2000 mg/kg (Rat)	400 ppm (Rabbit)
Ethoxylated C11 Alcohol	No data available	No data available	No data available
Ethoxylated Alcohol	= 1600 mg/kg (Rat)	= 2500 mg/kg (Rabbit)	No data available
1-undecanol (impurity)	= 3 g/kg (Rat)	> 5 g/kg (Rabbit)	> 700 mg/m³ (Rat) 6 h > 0.58 mg/L (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation. Skin contact. Eye contact. Ingestion.
Routes of entry	Inhalation. Eye contact. Skin contact. Ingestion. Skin absorption.
Specific target organ toxicity - Single exposure	Category 3
Specific target organ toxicity - Repeated exposure	Not classified.
Neurological effects	Central nervous system depressant.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Large amounts will affect pH and harm aquatic organisms

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Propan-2-ol	= 9640 mg/L LC50 Pimephales promelas 96 h = 11130 mg/L LC50 Pimephales promelas 96 h > 1400000 µg/L LC50 Lepomis macrochirus 96 h	> 1000 mg/L EC50 Desmodesmus subspicatus 96 h > 1000 mg/L EC50 Desmodesmus subspicatus 72 h	= 13299 mg/L EC50 Daphnia magna 48 h
2-butoxyethanol	= 1490 mg/L LC50 Lepomis macrochirus 96 h = 2950 mg/L LC50 Lepomis macrochirus 96 h	No information available	= 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea)
Ethoxylated C11 Alcohol	No information available	No information available	No information available
Ethoxylated Alcohol	No information available	No information available	No information available
1-undecanol (impurity)	= 1.04 mg/L LC50 Pimephales promelas 96 h 3.6 - 5.1 mg/L LC50 Lepomis macrochirus 96 h 4.78 - 8.85 mg/L LC50 Oncorhynchus mykiss 96 h	= 2.7 mg/L EC50 Pseudokirchneriella subcapitata 96 h	= 8.5 mg/L EC50 Daphnia magna 48 h 4.78 - 8.87 mg/L EC50 Daphnia magna 48 h = 320 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Propan-2-ol	Readily biodegradable
2-butoxyethanol	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Propan-2-ol	No bioaccumulation potential
2-butoxyethanol	Not likely to bioaccumulate

12.4 Mobility

Mobility
See component information below.

Chemical Name	Mobility
Propan-2-ol	Soluble in water
2-butoxyethanol	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Propan-2-ol	No information available
2-butoxyethanol	No information available

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Do not burn, or use a cutting torch on, the empty drum. Empty containers may contain flammable or explosive vapors. Dispose of contents/container to an approved waste disposal plant.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG) UN1993
UN No. (IMDG/ANTAQ) UN1993
UN No. (ICAO/ANAC) UN1993

14.2. UN proper shipping name
FLAMMABLE LIQUID, N.O.S. (contains Isopropanol)

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	3
IMDG/ANTAQ Hazard class	3
ICAO/ANAC Hazard class/division	3

14.4 Packing group

ADR/RID/ADN/ADG Packing group	III
IMDG/ANTAQ Packing group	III
ICAO/ANAC Packing group	III



14.5 Environmental hazard

Marine pollutant
No

14.6 Special precautions

Hazard identification no (ADR)	30
EmS (IMDG)	F-E, S-E
Emergency Action Code (EAC)	•3Y
Tunnel restriction code	D/E
Hazchem code ADG	•3Y

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-butoxyethanol
Schedule 6

New Zealand Hazard Classification	Classified
HSNO approval no.	HSR002495 - Additives, Process Chemicals and Raw Materials (Flammable) Group Standard 2020
Group number	3.1C, 6.1D, 6.3A, 6.9B, 8.3A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	13-Apr-2017
Revision date	02-Mar-2022
Version	4
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	3
Physical hazard	0
PPE	X

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Safety Data Sheet

EZEFLO* F110 Surfactant

Revision date 02-Apr-2024 **Supersedes Date:** 16-Oct-2019 **Version** 6

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name EZEFLO* F110 Surfactant
Product code F110

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Surfactant in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - Single exposure	Category 1

Environmental hazards

Chronic aquatic toxicity	Category 3

Physical Hazards

Flammable Liquids	Category 3

2.2 Label elements



Signal word
DANGER

Hazard Statements
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H370 - Causes damage to organs
H412 - Harmful to aquatic life with long lasting effects
H226 - Flammable liquid and vapor

Precautionary statements
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor

Supplementary precautionary statements
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Methanol

Ethoxylated C11 Alcohol

Alcohol, C9-C11, Ethoxylated

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Methanol	200-659-6	67-56-1	10-30
Ethoxylated C11 Alcohol	Polymer	34398-01-1	10-30
Alcohol, C9-C11, Ethoxylated	Polymer	68439-46-3	10-30

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, begin artificial respiration. Seek medical attention at once.

Ingestion Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

Skin contact Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

Eye Contact Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
P378 - Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
FLAMMABLE LIQUID AND VAPOR. Vapors are heavier than air and may spread along floors. Vapors may travel considerable distance to source of ignition and flash back.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Harmful organic chemical fumes.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG •3W

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. Remove all sources of ignition. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Take precautionary measures against static discharges. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Use clean non-sparking tools to collect absorbed material. Ground and bond containers when transferring material. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Ensure all equipment is electrically grounded before beginning transfer operations.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents Strong bases
Storage class	Toxic storage. Flammable liquid storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Methanol	250 ppm STEL 328 mg/m³ STEL 200 ppm TWA 262 mg/m³ TWA	250ppmSTEL 328mg/m³STEL 200ppmTWA 262mg/m³TWA	250 ppm STEL 325 mg/m³ STEL Skin designation 200 ppm TWA 260 mg/m³ TWA
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Alcohol, C9-C11, Ethoxylated	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**

Methanol	250 ppm STEL 310 mg/m³ STEL 200 ppm TWA 260 mg/m³ TWA	200 ppm TWA Skin notation 250 ppm STEL	May cause substantial skin absorption 200 ppm ACL 200 ppm OEL 260 mg/m³ OEL
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Alcohol, C9-C11, Ethoxylated	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Methanol	Not determined	260 mg/m³ TWA 200 ppm TWA Skin notation 325 mg/m³ STEL 250 ppm STEL	250 ppm STEL 328 mg/m³ STEL 200 ppm TWA 262 mg/m³ TWA Possibility of significant uptake through the skin
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Alcohol, C9-C11, Ethoxylated	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Methanol	200 ppm TWA 262 mg/m³ TWA	200 ppm TWA 260 mg/m³ TWA	5 mg/m³ TWA 15 mg/m³ MAC Skin
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Alcohol, C9-C11, Ethoxylated	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Methanol	Not determined	50 mg/m³ TWA 100 mg/m³ STEL	Skin 200 ppm TWA 260 mg/m³ TWA
Ethoxylated C11 Alcohol	Not determined	Not determined	Not determined
Alcohol, C9-C11, Ethoxylated	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Butyl rubber
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Alcohol

Property	**Values**	**Remarks**
pH	7	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	28 °C / 82.4 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	12.07 kPa	@ 23.3 °C
Relative Vapor Density	>1 (air = 1)	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 232 °C / 450 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	~ 5 mPa s	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	0.925 - 0.966 g/ml @ 15.56°C	

Explosive properties Vapours may form explosive mixtures with air
Oxidizing properties None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available

VOC content(%) No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Flammable liquid and vapor. Corrosive.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Oxidizing agents. Strong bases.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information	Methanol is more toxic to humans and primates than to most experimental animals, due to differences in how it is metabolized. Non-primates do not appear to experience the acidosis or vision effects observed in humans and primates.
Inhalation	Toxic by inhalation. Vapors inhaled in high concentration have a narcotic effect on the central nervous system. Inhaled corrosive substances can lead to a toxic edema of the lungs.
Eye contact	Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Toxic in contact with skin. Components of the product may be absorbed into the body through the skin.
Ingestion	Toxic if swallowed. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED.
Unknown acute toxicity	Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methanol	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h
Ethoxylated C11 Alcohol	No data available	No data available	No data available
Alcohol, C9-C11, Ethoxylated	= 1400 mg/kg (Rat) = 1378 mg/kg (Rat)	> 2 g/kg (Rabbit)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact. Ingestion. Eye contact.

Routes of entry Ingestion. Inhalation. Skin absorption.

Specific target organ toxicity - Single exposure Category 1

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Central nervous system.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Methanol	= 28200 mg/L LC50 Pimephales promelas 96 h > 100 mg/L LC50 Pimephales promelas 96 h 19500 - 20700 mg/L LC50 Oncorhynchus mykiss 96 h	EC50= 22000 mg/l - Duration h: 96 - Notes: Literature data.	EC50> 10000 mg/l - Duration h: 48 - Notes: Literature data.

	18 - 20 mL/L LC50 Oncorhynchus mykiss 96 h 13500 - 17600 mg/L LC50 Lepomis macrochirus 96 h		
Ethoxylated C11 Alcohol	No information available	= 3.4 mg/L (EC50; Skeletonema costatum)= 72h	No information available
Alcohol, C9-C11, Ethoxylated	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Ethoxylated C11 Alcohol	No information available
Alcohol, C9-C11, Ethoxylated	Rapidly biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Ethoxylated C11 Alcohol	No information available
Alcohol, C9-C11, Ethoxylated	Not likely to bioaccumulate

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Ethoxylated C11 Alcohol	No information available
Alcohol, C9-C11, Ethoxylated	Miscible in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Ethoxylated C11 Alcohol	No data available

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Do not burn, or use a cutting torch on, the empty drum. Empty containers may contain flammable or explosive vapors. Empty containers should be taken for local recycling,

recovery or waste disposal.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN1992
UN No. (IMDG/ANTAQ)	UN1992
UN No. (ICAO/ANAC)	UN1992

14.2. UN proper shipping name

FLAMMABLE LIQUID, TOXIC, N.O.S. (contains methanol),

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	3 (6.1)
IMDG/ANTAQ Hazard class	3 (6.1)
ICAO/ANAC Hazard class/division	3 (6.1)

14.4 Packing group

ADR/RID/ADN/ADG Packing group	III
IMDG/ANTAQ Packing group	III
ICAO/ANAC Packing group	III



14.5 Environmental hazard

No

14.6 Special precautions

Hazard identification no (ADR)	36
EmS (IMDG)	F-E, S-D
Emergency Action Code (EAC)	•3W
Tunnel restriction code	(D/E)
Hazchem code ADG	•3W

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Methanol
Schedule 6
Schedule 5

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	16-Oct-2019
Revision date	02-Apr-2024
Version	6
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	3
Physical hazard	0
PPE	X

Disclaimer

The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

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SDS no. D620
Version 4
Revision date 17-Aug-2023
Supersedes Date: 29-Sep-2020

Safety Data Sheet
GASBLOK* Gas Migration Control Additive D620

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name GASBLOK* Gas Migration Control Additive D620
Product code D620

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin sensitization	Category 1A

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H317 - May cause an allergic skin reaction

Precautionary statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P362 + P364 - Take off contaminated clothing and wash it before reuse

Contains
Propane-1,2-diol

2-methyl-2h-isothiazol-3-one

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Propane-1,2-diol	200-338-0	57-55-6	1-5
2-methyl-2h-isothiazol-3-one	220-239-6	2682-20-4	>0.0015 - <0.01

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, fog, Carbon dioxide (CO_2), foam or dry chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep at (23°F - 122°F) -5°C - 50°C Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong oxidizing agents Strong acids Strong bases

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Propane-1,2-diol	Not determined	150ppmTWAtotal vapour and particulates 474mg/m³TWAtotal vapour and	Not determined

		particulates 10mg/m³TWAparticulates only	
2-methyl-2h-isothiazol-3-one	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Propane-1,2-diol	Not determined	Not determined	Not determined
2-methyl-2h-isothiazol-3-one	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Propane-1,2-diol	7 mg/m³ MAC	Not determined	150 ppm TWA 474 mg/m³ TWA 10 mg/m³ TWA
2-methyl-2h-isothiazol-3-one	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Propane-1,2-diol	Not determined	Not determined	7 mg/m³ MAC
2-methyl-2h-isothiazol-3-one	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Propane-1,2-diol	Not determined	Not determined	Not determined
2-methyl-2h-isothiazol-3-one	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Keep airborne concentrations below exposure limits

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Neoprene Rubber Nitrile
Break through time >480 minutes
Glove thickness >0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Opaque
Color	Milky white
Odor	Characteristic

Property	Values	Remarks
pH	7 - 9	@ 23°C (TM 0102)
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	98 °C / 208 °F	
Flash point	> 98 °C / > 208 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	23.28 hPa	@ 20 °C
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	20 - 140 mPa s	@ 23 °C (TM 0105)
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	1.03	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep at (23°F - 122°F) -5°C - 50°C. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact May cause an allergic skin reaction.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Propane-1,2-diol	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	No data available
2-methyl-2h-isothiazol-3-one	232 - 249 mg/kg (Rat) = 120 mg/kg (Rat)	= 200 mg/kg (Rabbit)	= 0.11 mg/L (Rat) 4 h

Sensitization May cause allergic skin reaction.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Skin contact. Inhalation.

Routes of entry Skin contact. Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Propane-1,2-diol	= 710 mg/L LC50 Pimephales promelas 96 h = 51600 mg/L LC50 Oncorhynchus mykiss 96 h 41 - 47 mL/L LC50 Oncorhynchus mykiss 96 h = 51400 mg/L LC50 Pimephales promelas 96 h	= 19000 mg/L EC50 Pseudokirchneriella subcapitata 96 h	> 1000 mg/L EC50 Daphnia magna 48 h
2-methyl-2h-isothiazol-3-one	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Propane-1,2-diol	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Propane-1,2-diol	Not likely to bioaccumulate log Kow =-1.07

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-methyl-2h-isothiazol-3-one
Schedule 6

New Zealand Hazard Classification Construction Products (Subsidiary Hazard) Group Standard 2020

HSNO approval no. HSR002544

Group number	6.5B

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	This product contains chemical(s) which is/are not listed on DSL but is/are listed on the NDSL.
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	29-Sep-2020
Revision date	17-Aug-2023
Version	4
This SDS has been revised in the following section(s)	7. Handling and storage 9. Physical and chemical properties Section 16: Other information No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	X

Disclaimer

The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.
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Safety Data Sheet

Gel Suppressing Agent D606

Revision date 02-Apr-2024 **Supersedes Date:** 09-Feb-2010 **Version** 4

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Gel Suppressing Agent D606
Product code D606

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Sulphur oxides, Sodium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid spills and splashing during use. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits

NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.
Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m^3 (Inhalable); 3 mg/m^3 (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m^3 (Total); 5 mg/m^3 (Respirable).

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	White
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	> 884 °C / 1623 °F	
Boiling point/range	Not Applicable	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	

Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	1.1 - 1.6 g/cm³
Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

Ecotoxicity effects

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
None

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	09-Feb-2010
Revision date	02-Apr-2024
Version	4
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	E

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Safety Data Sheet

SDS no. D081

Liquid Retarder D81

Revision date 30-Jan-2024 **Supersedes Date:** 10-Aug-2023 **Version** 6

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Liquid Retarder D81
Product code D081

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components
2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Store away from incompatibles, Strong acids Strong oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	The product does not contain any hazardous materials with occupational exposure limits established.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Local exhaust ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile

	Break through time >480 minutes Glove thickness >0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Color	Dark brown
Odor	Of burnt sugar / Slight

Property	**Values**	**Remarks**
pH	3.5 - 5.1	
pH @ dilution	No information available	
Melting / freezing point	0 °C / 32 °F	
Boiling point/range	No information available	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	Not applied	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	Not applied	
Relative Vapor Density	No information available	
Specific gravity	1.24 - 1.26	@ 27 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	400 °C / 752 °F	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	350 mPa.s	@ 20 °C
Partition Coefficient (n-octanol/water)	No information available	

Density and/or Relative Density	No information available
Explosive properties	Not applied
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from direct sunlight.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	None known.
Routes of entry	None known.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not Applicable.

11.2 Information on other hazards

Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	10-Aug-2023
Revision date	30-Jan-2024
Version	6
This SDS has been revised in the following section(s)	9, 16 No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	B

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SDS no. D155
Version 5
Revision date 06-Feb-2023
Supersedes Date: 13-Nov-2019

Safety Data Sheet
Low-Temperature Liquid Extender D155

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Low-Temperature Liquid Extender D155
Product code D155

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Fumed silica

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Fumed silica	273-761-1	69012-64-2	30 - 60

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Store above 0°C Protect from freezing React with hydrofluoric acid (HF) forming toxic gas (SiF4)

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

Component Information

Chemical Name	Arabic	Australia	Egypt
Fumed silica	10 mg/m³ TWA 3 mg/m³ TWA 2 mg/m³ TWA	2mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Fumed silica	Not determined	2 mg/m³ TWA	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Fumed silica	Not determined	Not determined	2 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Fumed silica	2 mg/m³ TWA	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Fumed silica	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Break through time >480 minutes Glove thickness >=0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of inadequate ventilation wear respiratory protection Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Slurry
Odor	Odorless
Color	Gray

Property	**Values**	**Remarks**
pH	4 - 7	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	Similar to water.	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.35 - 1.42	
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	

Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from freezing. Store above 0°C.

10.5 Incompatible materials

Hydrofluoric acid (HF).

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information	Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.
Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Fumed silica	>5000 mg/kg bw	>5000 mg/kg bw	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure None known.

Routes of entry None known.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Fumed silica	LC50>100 mg/l	LC50>323 mg/l (72h)	LC50>1003 mg/l

12.2 Persistence and degradability

Not Applicable - Inorganic chemical. See component information below.

Chemical Name	Persistence and degradability
Fumed silica	Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical. See component information below.

Chemical Name	Bioaccumulation
Fumed silica	Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Fumed silica	Slightly soluble

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	13-Nov-2019
Revision date	06-Feb-2023

Version	5
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	B

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Safety Data Sheet

MUDPUSH* II Spacer D182

Revision date 12-Jan-2024 **Supersedes Date:** 14-Jan-2021 **Version** 5

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name MUDPUSH* II Spacer D182
Product code D182
Country Limitations Japan : Contact GRC-C for further information.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Sulfonated organic polymer

Glucoside polymer

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Sulfonated organic polymer	Listed	Proprietary	60-100
Glucoside polymer	Listed	Proprietary	30-60

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
High volume water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Keep away from direct sunlight. Incompatible with oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.
Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m^3 (Inhalable); 3 mg/m^3 (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m^3 (Total); 5 mg/m^3 (Respirable).

Component Information

Chemical Name	Arabic	Australia	Egypt
Sulfonated organic polymer	Not determined	Not determined	Not determined
Glucoside polymer	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Sulfonated organic polymer	Not determined	Not determined	Not determined
Glucoside polymer	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sulfonated organic polymer	Not determined	Not determined	Not determined

Glucoside polymer	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sulfonated organic polymer	Not determined	Not determined	Not determined
Glucoside polymer	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sulfonated organic polymer	Not determined	Not determined	Not determined
Glucoside polymer	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Rubber Neoprene Nitrile Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Red brown
Odor	Mild Sweet

Property	Values	Remarks
pH	No information available	
pH @ dilution	~8	650g/l (Soln)
Melting / freezing point	No information available	
Boiling point/range	Not applicable	
Flash point	No information available	
Evaporation rate (BuAc =1)	Not applicable	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	Not applicable	
Relative Vapor Density	Not applicable	
Specific gravity	1.3	@ 20 °C
Bulk density	No information available	
Water solubility	Partly soluble Gel in contact with water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 242 °C / 468 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Suspended dust may present a dust explosion hazard	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Take precautionary measures against static charges.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Eye contact Dust contact with the eyes can lead to mechanical irritation.

Skin contact Repeated exposure may cause skin dryness or cracking.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfonated organic polymer	No data available	No data available	No data available
Glucoside polymer	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact. Eye contact.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sulfonated organic polymer	No information available	No information available	No information available
Glucoside polymer	No information available	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

12.4 Mobility

Mobility
Partly soluble. Gel in contact with water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies - Volume restriction.
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	14-Jan-2021
Revision date	12-Jan-2024
Version	5
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

Disclaimer
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SDS no. U066
Version 4
Revision date 31-Mar-2022
Supersedes Date: 03-Sep-2018

Safety Data Sheet
Mutual Solvent U66

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Mutual Solvent U66
Product code U066

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Solvent in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards

Flammable Liquids	Category 4

2.2 Label elements



Signal word
WARNING

Hazard Statements
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H227 - Combustible liquid

Precautionary statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P403 + P235 - Store in a well-ventilated place. Keep cool

Contains
2-butoxyethanol

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%

2-butoxyethanol	203-905-0	111-76-2	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
P378 - Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
combustible liquid. Vapors may form explosive mixture with air. Vapors are heavier than air and may spread along floors. Heating of containers may cause pressure rise, with risk of bursting.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Do not eat, drink or smoke when using this product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Keep away from direct sunlight. Avoid contact

with: Oxidizing agents Strong bases

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

Packaging materials to be avoided Aluminium Copper

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
2-butoxyethanol	25 ppm TWA 121 mg/m³ TWA	50ppmSTEL 242mg/m³STEL 20ppmTWA 96.9mg/m³TWA	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
2-butoxyethanol	Not determined	20 ppm TWA	20 ppm Ceiling 97 mg/m³ Ceiling May cause substantial skin absorption 25 ppm ACL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
2-butoxyethanol	5 mg/m³ MAC	Not determined	25 ppm TWA 121 mg/m³ TWA Possibility of significant uptake through the skin*1)
Chemical Name	**Malaysia**	**Philippines**	**Russia**
2-butoxyethanol	20 ppm TWA 96.7 mg/m³ TWA Skin notation*3)	skin - potential for cutaneous absorption 50 ppm TWA 240 mg/m³ TWA	5 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
2-butoxyethanol	50 ppm TWA	Not determined	50 ppm STEL 246 mg/m³ STEL Skin*2) 20 ppm TWA 98 mg/m³ TWA

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile Butyl rubber Neoprene

	Break through time >480 minutes Glove thickness 0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators In case of inadequate ventilation wear respiratory protection Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Mild
Color	Colorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	-75 °C / -103 °F	
Boiling point/range	171 °C / 339.8 °F	
Flash point	67 °C / 152.6 °F	PMCC
Evaporation rate (BuAc =1)	= 0.06	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	10.6 %	
Lower explosion limit	1.3 %	
Vapor pressure	0.117 kPa	@ 20 °C
Relative Vapor Density	4.1 (air = 1)	
Specific gravity	0.9	20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	230 °C / 446 °F	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	3.3 mPa s	@ 20 °C
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Combustible liquid.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Keep away from direct sunlight. Take precautionary measures against static charges.

10.5 Incompatible materials

Oxidizing agents. Strong bases. Aluminum. Copper.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Harmful by inhalation. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.
Eye contact	Causes serious eye irritation.
Skin contact	Harmful in contact with skin. Causes skin irritation. May be absorbed through the skin in harmful amounts.
Ingestion	Harmful if swallowed.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation

2-butoxyethanol	1200 mg/kg (Guinea pigs)	> 2000 mg/kg (Rat)	400 ppm (Rabbit)

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Ingestion. Skin contact. Eye contact.

Routes of entry Ingestion. Inhalation. Skin absorption. Eye contact. Skin contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2-butoxyethanol	= 1490 mg/L LC50 Lepomis macrochirus 96 h = 2950 mg/L LC50 Lepomis macrochirus 96 h	No information available	= 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea)

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
2-butoxyethanol	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
2-butoxyethanol	Not likely to bioaccumulate

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
2-butoxyethanol	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
2-butoxyethanol	No information available

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-butoxyethanol
Schedule 6

New Zealand Hazard Classification	Classified
HSNO approval no.	HSR001154
Group number	Not applicable

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	03-Sep-2018
Revision date	31-Mar-2022
Version	4

This SDS has been revised in the following section(s) All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2*
Flammability	2
Physical hazard	0
PPE	X

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Safety Data Sheet

SDS no. D013

Retarder D013

Revision date 14-Aug-2024 **Supersedes Date:** 15-Jan-2020 **Version** 7

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Retarder D013
Product code D013

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components
2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Seek medical attention if irritation occurs.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Suspended dust may present a dust explosion hazard.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. Use non-sparking tools and equipment. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Take precautionary measures against static discharges.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong oxidizing agents Strong acids Strong alkalies.
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	The product does not contain any hazardous materials with occupational exposure limits established.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment
Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts

	Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Color	Light brown
Odor	Slight

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	3.5 - 5.1	@ 10% aq solution
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.2	20 °C
Bulk density	500 kg/m^3	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	

Density and/or Relative Density	No information available
Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Avoid dust formation.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong alkalies.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Repeated exposure may cause skin dryness or cracking.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

LD50 Oral	> 15000 mg/kg (Product)

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation. Skin contact. Eye contact.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not Applicable.

11.2 Information on other hazards

Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Inherently biodegradable.

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required

Group number Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

Supersedes Date: 15-Jan-2020

Revision date 14-Aug-2024

Version 7

This SDS has been revised in the following section(s) All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier

National Chemical Inventories
National regulatory information
National occupational exposure limits

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SDS no. D066
Version 4
Revision date 21-Aug-2023
Supersedes Date: 02-Mar-2020

Safety Data Sheet
Silica Flour D66

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Silica Flour D66
Product code D066

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Specific target organ toxicity - Repeated exposure	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

_

Contains
Quartz, Crystalline silica

Respirable Crystalline Silica (Quartz)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Quartz, Crystalline silica	238-878-4	14808-60-7	60-100
Respirable Crystalline Silica (Quartz)	238-878-4	14808-60-7	<10

3.2 Mixtures

Not applicable

Comments
IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact	Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Hydrofluoric acid (HF) Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Cyprus OEL - Quartz, Crystalline silica - 0.1 mg/m³ TWA respirable fraction

Component Information

Chemical Name	Arabic	Australia	Egypt
Quartz, Crystalline silica	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Respirable Crystalline Silica (Quartz)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Quartz, Crystalline silica	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Respirable Crystalline Silica (Quartz)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**

Quartz, Crystalline silica	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Respirable Crystalline Silica (Quartz)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Quartz, Crystalline silica	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Respirable Crystalline Silica (Quartz)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Quartz, Crystalline silica	0.025 mg/m³ TWA	Not determined	Not determined
Respirable Crystalline Silica (Quartz)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene gloves Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Tan or White
Odor	Odorless

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	No information available	
Melting / freezing point	> 1700 °C / 3092 °F	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.50 - 2.70	@20 °C
Bulk density	1100- 1600 kg/m^3	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.
Particle characteristics	60-100 wt% <325 mesh, 35 wt% max 200-325 mesh, 8 wt% max 100-200 mesh, 0.5 wt% max >100 mesh (ASTM E276)

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None known.

10.4 Conditions to avoid

Avoid dust formation.

10.5 Incompatible materials

Hydrofluoric acid (HF). Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause respiratory irritation. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

Eye contact Dust may cause mechanical irritation.

Skin contact Repeated exposure may cause skin dryness or cracking.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Quartz, Crystalline silica	No data available	No data available	No data available
Respirable Crystalline Silica (Quartz)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Category 2.

Target organ effects Respiratory system. Lungs.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Quartz, Crystalline silica	No information available	No information available	No information available
Respirable Crystalline Silica (Quartz)	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Quartz, Crystalline silica	Inorganic compound
Respirable Crystalline Silica (Quartz)	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Quartz, Crystalline silica	Product/Substance is inorganic
Respirable Crystalline Silica (Quartz)	Product/Substance is inorganic

12.4 Mobility

Mobility
See component information below.

Chemical Name	Mobility
Quartz, Crystalline silica	Insoluble in water
Respirable Crystalline Silica (Quartz)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Quartz, Crystalline silica	Not expected to adsorb on soil
Respirable Crystalline Silica (Quartz)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	02-Mar-2020
Revision date	21-Aug-2023
Version	4
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*

Flammability	1
Physical hazard	0
PPE	X

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SDS no. D075
Version 7
Revision date 23-Dec-2022
Supersedes Date: 12-Sep-2019

Safety Data Sheet
Silicate Additive D75

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Silicate Additive D75
Product code D075

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains No hazardous components
2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Contact with metals may evolve flammable hydrogen gas.

Hazardous combustion products
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep at temperatures above > 32°F / 0°C Avoid contact with: Strong acids Metals Aluminum Zinc
Storage class	Chemical storage.
Packaging materials to be avoided	Metal Aluminium Zinc Steel

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	The product does not contain any hazardous materials with occupational exposure limits established.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Use protective gloves made of: PVC Rubber Neoprene Nitrile Break through time >480 minutes Glove thickness 0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Odor	Odorless
Color	Colorless

Property	**Values**	**Remarks**
pH	11	
pH @ dilution	No information available	
Melting / freezing point	- 1 °C / 30 °F	
Boiling point/range	101 °C / 214 °F	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.37 - 1.42	@ 20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	10-10000 mPa s	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Contact with metals may evolve flammable hydrogen gas.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep at temperatures above > 32◦F / 0°C.

10.5 Incompatible materials

Aluminum. Zinc. Metals. Strong acids. Steel.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	None known.
Routes of entry	No route of entry noted.

Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	12-Sep-2019
Revision date	23-Dec-2022
Version	7
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	B

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Safety Data Sheet

SDS no. D065

TIC* D65 Dispersant

Revision date 13-Mar-2024 **Supersedes Date:** 08-Jun-2021 **Version** 8

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name TIC* D65 Dispersant
Product code D065

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Sodium sulfate (Impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Combustible dust

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Sodium sulfate (Impurity)	231-820-9	7757-82-6	1-5

3.2 Mixtures

Not applicable

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Suspended dust may present a dust explosion hazard.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sulfur dioxide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Keep away from combustible material. Avoid contact with heat, sparks, open flame, and static discharge. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Take precautionary measures against static discharges. Use non-sparking tools and equipment. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid handling causing generation of dust. All equipment used when handling the product must be grounded. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Fine dust dispersed in air may ignite. Take precautionary measures against static discharges.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before beginning transfer operations.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Protect from moisture
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust. Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m^3 (Inhalable); 3 mg/m^3 (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m^3 (Total); 5 mg/m^3 (Respirable).

Component Information

Chemical Name	Arabic	Australia	Egypt

Sodium sulfate (Impurity)	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Sodium sulfate (Impurity)	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sodium sulfate (Impurity)	10 mg/m³ MAC	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sodium sulfate (Impurity)	Not determined	Not determined	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sodium sulfate (Impurity)	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

Hand protection
Wear gloves according to EN 374 to protect against skin effects from powders
Use protective gloves made of: Nitrile Neoprene
Frequent change is advisable

Respiratory protection
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	Tan
Odor	Faint

Property	**Values**	**Remarks**
pH	Approximately 10	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	Not applied	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	Not applied	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	Not applied	
Relative Vapor Density	Not applied	
Specific gravity	1.35 - 1.45	20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Avoid contact with heat, sparks, open flame, and static discharge. Protect from moisture. Keep away from direct sunlight.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium sulfate (Impurity)	> 10000 mg/kg (Rat)	No data available	> 2.4 mg/L (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact. Eye contact.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not classified.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium sulfate (Impurity)	13500 - 14500 mg/L LC50 Pimephales promelas 96 h > 6800 mg/L LC50 Pimephales promelas 96 h 3040 - 4380 mg/L LC50 Lepomis macrochirus 96 h = 13500 mg/L LC50 Lepomis macrochirus 96 h	No information available	= 2564 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required

Group number Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	08-Jun-2021
Revision date	13-Mar-2024
Version	8
This SDS has been revised in the following section(s)	9. Physical and chemical properties No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

Disclaimer

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SDS no. D168
Version 5
Revision date 24-Jan-2023
Supersedes Date: 23-Mar-2018

Safety Data Sheet
UNIFLAC* L D168

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name UNIFLAC* L D168
Product code D168

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye Contact	Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
High volume water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Nitrogen oxides (NOx), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	The product does not contain any hazardous materials with occupational exposure limits established.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl rubber Break through time >480 minutes Glove thickness 0.7 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Odorless
Color	White - Light yellow

Property	**Values**	**Remarks**
pH	6 - 8	@ 20 °C
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	100 °C / 212 °F	
Flash point	> 100 °C / > 212 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	500 °C / 932 °F	
Decomposition temperature	260 °C / 500 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	2000 - 4000 cPs	@ 20 °C
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	1.06 g/cm³ @ 20 °C	
Explosive properties	No information available	
Oxidizing properties	Not applicable	

9.2 Other information

Pour point	-6°C / 21.2 °F
Molecular weight	No information available

VOC content(%) None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	None known.

Routes of entry	None known.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
The product is miscible with water. May spread in water systems.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not applicable

Group number Not applicable

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	23-Mar-2018
Revision date	24-Jan-2023
Version	5
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	B

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Safety Data Sheet

UNIFLAC-S D167A

Revision date 04-Apr-2024 **Supersedes Date:** 03-Nov-2021 **Version** 3

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name UNIFLAC-S D167A
Product code D167A

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains
2-methylpropan-2-ol (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
2-methylpropan-2-ol (impurity)	200-889-7	75-65-0	1-<5

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Suspended dust may present a dust explosion hazard.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Hydrogen cyanide (hydrocyanic acid).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Keep away from combustible material. Avoid contact with heat, sparks, open flame, and static discharge. Material becomes slippery when wet. Use caution if wet. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Take precautionary measures against static discharges. Use non-sparking tools and equipment. Material becomes slippery when wet. Use caution if wet. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid handling causing generation of dust. Material becomes slippery when wet. Use caution if wet. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Fine dust dispersed in air may ignite.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Component Information

Chemical Name	Arabic	Australia	Egypt
2-methylpropan-2-ol (impurity)	100 ppm TWA 303 mg/m³ TWA	150ppmSTEL 455mg/m³STEL 100ppmTWA 303mg/m³TWA	100 ppm TWA 303 mg/m³ TWA
Chemical Name	**India**	**Indonesian**	**Japan**
2-methylpropan-2-ol (impurity)	Not determined	100 ppm TWA 303 mg/m³ TWA	50 ppm OEL 150 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
2-methylpropan-2-ol (impurity)	10 mg/m³ MAC	Not determined	150 ppm STEL 455 mg/m³ STEL

			100 ppm TWA 303 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
2-methylpropan-2-ol (impurity)	100 ppm TWA 303 mg/m³ TWA	100 ppm TWA 300 mg/m³ TWA	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
2-methylpropan-2-ol (impurity)	100 ppm TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of:
Butyl rubber Neoprene Nitrile rubber
Frequent change is advisable

Respiratory protection — In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure — Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state — Solid
Appearance — Powder

Color	White
Odor	None

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	5 - 7	@ 0.5% solution
Melting / freezing point	> 150 °C / 302 °F	
Boiling point/range	No information available	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	0.2 - 0.9	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	Not determined	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Strong acids. Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-methylpropan-2-ol (impurity)	= 2200 mg/kg (Rat)	> 2 g/kg (Rabbit)	> 10000 ppm (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2-methylpropan-2-ol (impurity)	6130 - 6700 mg/L LC50 Pimephales promelas 96 h	> 1000 mg/L EC50 Desmodesmus subspicatus 72 h	= 933 mg/L EC50 Daphnia magna 48 h 4607 - 6577 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	03-Nov-2021
Revision date	04-Apr-2024
Version	3
This SDS has been revised in the following section(s)	Section 16: Other information No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	1
PPE	B

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CHEMICAL DISCLOSURE FOR BURU ENERGY

A. SYSTEM DETAILS:

OPERATOR:	**Buru Energy**
PROJECT / WELL:	**Well Drilling and Workover Campaign**
SYSTEM:	**Crude Oil Reinjection**
TOTAL VOLUME OF SYSTEM:	**320,000 Lt**

B. PRODUCT LIST:

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
Idcide-20	Newpark	Biocide/Prevents bacterial contamination of the mud	**Toxicology Data:** LD50 (ingestion) 248 mg/kg (rat) TDLo (ingestion) 650 mg/kg/13 weeks - intermittent (rat) **Ecotoxicity Data**: LC50 (Rainbow Trout) = 119 mg/L/96 hr LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr EC50 (Daphnia Magna) = 19 mg/L/48 hr LC50 (Brown Shrimp) = 340 mg/L/96 hr LC50 (Mysid Shrimp) = 9.5 mg/L/96 hr LC50 (Sheepshead Minnow) = 94 mg/L/96 hr LC50 (Jevenile Plaice) = 86 mg/L/96 hr **Biodegradation/bioaccumulation:** This product is readily biodegradable.	0.0849%	Y
BIOC16733A	ChampionX	Biocide	**Toxicity**: Toxic to aquatic life with long lasting effects. Harmful to aquatic life. Toxicity to fish : LC50 Lepomis macrochirus (Bluegill sunfish): 93 mg/l Exposure time: 96 hrs Test substance: 75% Active Ingredient LC50 Oncorhynchus mykiss (rainbow trout): 119 mg/l Exposure time: 96 hrs Test substance: 75% Active Ingredient	0.0499%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Toxicity to daphnia and other aquatic invertebrates: EC50 Daphnia magna (Water flea): 19.4 mg/l Exposure time: 48 hrs Test substance: 75% Active Ingredient Toxicity to algae: LC50 Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum): 0.20 mg/l Exposure time: 96 hrs Test substance: 75% Active Ingredient Toxicity to bacteria: EC50 Bacteria: 24 mg/l Exposure time: 3 hrs Test substance: 75% Active Ingredient **Persistence and degradability:** The organic portion of this preparation is expected to be readily biodegradable. Mobility: The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages; Air: <5% Water: 30-50% Soil: 50 – 70% The portion in water is expected to be soluble or dispersible.		

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Bioaccumulative potential: This preparation or material is not expected to bioaccumulate.		
Crude oil from storage tanks	Buru Energy (Well Test Tanks)	Source fluid	*No scientific data or research is available for this particular crude oil. Data are presented for similar crude oil from the Company's Ungani Oilfield. The below data are taken from the Ungani Stock Tank Crude Oil SDS.* **AQUATIC TOXICOLOGY** Basis for Assessment: The information given is based on the major component of the product (> 60% petroleum distillate). 96 Hr LC50 Salmo gairdneri: 258 mg/L (static) 24 Hr EC50 Daphnia magna: 36 mg/L 48 Hr EC50 Daphnia magna: <0.26 mg/L (static) **ACUTE MAMMALIAN TOXICITY** **Component 1 (>90% as an ingredient)** Rat, mouse LD50 Oral: >4,300 mg/kg **Component 2 (<0.03% as an ingredient)** Rat LD50 Oral: 636 mg/kg Rabbit LD50 Dermal: >14,100 µL/kg Mouse LC50 Inhalation: 400 ppm/24 hours **Component 3 (<0.01% as an ingredient)** Rat LD50 Oral: 930 mg/kg Mouse LD50 Dermal: 48 mg/kg Mouse LC50 Inhalation: 9980 ppm **CHEMICAL FATE** Low Pow >3 – this product is more soluble in octanol. **ENVIRONMENTAL FATE** Inherently biodegradable. Contains constituents with the potential to bioaccumulate. May accumulate in sediments. **CHRONIC TOXICOLOGY** Potential carcinogen. Component 3 classified as a carcinogenic to humans (IARC Group 1). Exposure may cause drowsiness or dizziness. May cause skin irritation with prolonged or repeated contact.	99.8652%	Y
TOTAL				**100%**	

** With reference to biodegradation, where a Product is organic then Contractor must state as such in this column

C. CHEMICAL LIST

Chemicals within Products in Part B	CAS Number	Mass Fraction (%)
PETROLEUM (CRUDE OIL) (<0.1% W/W BENZENE)	8002-05-9	99.7404%
TOLUENE	108-88-3	0.02989 %
BENZENE	71-43-2	0.009978 %
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	55566-30-8	0.0736 %
BENZALKONIUM CHLORIDE	68424-85-1	0.01884 %
Water	7732-18-5	0.1273 %
TOTAL	-	**100 %**

SAFETY DATA SHEET

BIOC16733A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	BIOC16733A
Other means of identification	:	Not applicable.
Restrictions on use	:	Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company	:	ChampionX Australia Pty Ltd Suite 1/5 Brodie-Hall Drive, Technology Park Bentley WA 6102 Australia TEL: +61 8 9473 9000
Emergency telephone number	:	CHEMCALL 1800 127 406, International: +64 4 917 8888
Issuing date	:	23.04.2023

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	:	Category 4
Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 3
Skin corrosion/irritation	:	Sub-category 1B
Serious eye damage/eye irritation	:	Category 1
Skin sensitization	:	Category 1
Reproductive toxicity	:	Category 2

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements :
Combustible liquid
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Toxic if inhaled.
Suspected of damaging fertility or the unborn child.

Precautionary Statements :
Prevention:
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing mist or vapours. Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin

with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Tetrakis(hydroxymethyl) phosphonium sulfate	55566-30-8	60 - 100
benzalkonium chloride	68424-85-1	5 - 10

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention immediately.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.

Unsuitable extinguishing : None known.

media

Specific hazards during firefighting	:	Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance.
Hazardous combustion products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus Hydrogen chloride
Special protective equipment for firefighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.
Hazchem Code	:	2X

Section: 6. ACCIDENTAL RELEASE MEASURES

Initial Emergency Response Guide No	:	36
Personal precautions, protective equipment and emergency procedures	:	Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up	:	Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

Advice on safe handling	:	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
Conditions for safe storage	:	Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
Suitable material	:	Keep in properly labelled containers.
Unsuitable material	:	not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Tetrakis(hydroxymethyl) phosphonium sulfate	55566-30-8	TWA	2 mg/m3	ACGIH

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear impervious chemical-resistant gloves when handling this product.
The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Butyl rubber
Nitrile rubber
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear protective overalls, chemical splash goggles and impervious gloves.
A full slicker suit is recommended if gross exposure is possible.

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.

Use local exhaust ventilation or other engineering controls as necessary to control airborne vapour and mist.
Where concentrations in air may exceed the limits given in this section or when significant vapours are generated, use an approved air purifying respirator fitted with a gas and vapour cartridge.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Multi-purpose combination filter
In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : clear

Odour	:	Pungent
Flash point	:	74 °C
pH	:	4.0 - 4.5,(100 %)
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available
Initial boiling point and boiling range	:	105 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	Not applicable.
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	17 kPa, (37.8 °C),
Relative vapour density	:	no data available
Relative density	:	1.32, (19 °C),
Density	:	10.3 lb/gal
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	33 mPa.s (19 °C)
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

Note: properties listed in this section may be typical, calculated, or estimated values and should not be used as product specifications or for system design. For product specifications see the COA or Technical Data sheet.

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Strong acids Strong Bases Reducing agents Strong oxidizing agents

Hazardous decomposition products	:	In case of fire hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus Hydrogen chloride

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes severe skin burns. May cause allergic skin reaction. May be harmful in contact with skin.
Ingestion	:	Harmful if swallowed. Causes digestive tract burns.
Inhalation	:	Toxic if inhaled. May cause nose, throat, and lung irritation.
Chronic Exposure	:	Suspected of damaging fertility or the unborn child.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Pain, Irritation, Corrosion, Allergic reactions
Ingestion	:	Corrosion, Abdominal pain
Inhalation	:	Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity	:	LD50 rat: 575 mg/kg Test substance: 75% Active Ingredient
Acute inhalation toxicity	:	LC50 rat: 0.591 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist Test substance: 75% Active Ingredient
Acute dermal toxicity	:	LD50 rat: > 2,000 mg/kg Test substance: 75% Active Ingredient
Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive effects	:	Suspected of damaging fertility or the unborn child.
Germ cell mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	No aspiration toxicity classification

Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: High

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects	:	Toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Product

Toxicity to fish	:	LC50 Lepomis macrochirus (Bluegill sunfish): 93 mg/l Exposure time: 96 hrs Test substance: 75% Active Ingredient LC50 Oncorhynchus mykiss (rainbow trout): 119 mg/l Exposure time: 96 hrs Test substance: 75% Active Ingredient
Toxicity to daphnia and other aquatic invertebrates	:	EC50 Daphnia magna (Water flea): 19.4 mg/l Exposure time: 48 hrs Test substance: 75% Active Ingredient
Toxicity to algae	:	LC50 Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum): 0.20 mg/l Exposure time: 96 hrs Test substance: 75% Active Ingredient
Toxicity to bacteria	:	EC50 Bacteria: 24 mg/l Exposure time: 3 hrs Test substance: 75% Active Ingredient

Persistence and degradability

The organic portion of this preparation is expected to be readily biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	30 - 50%

Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport

Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.
Technical name(s): : Tetrakis(hydroxymethyl) phosphonium sulfate
UN/ID No. : UN 2810
Transport hazard class(es) : 6.1
Packing group : III
IERG No : 36
Hazchem Code : 2X

Air transport (IATA)

UN/ID No. : UN 2810
Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.
Technical name(s) : Tetrakis(hydroxymethyl) phosphonium sulfate
Transport hazard class(es) : 6.1
Packing group : III

Sea transport (IMDG/IMO)

UN/ID No. : UN 2810
Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.
Technical name(s) : Tetrakis(hydroxymethyl) phosphonium sulfate
Transport hazard class(es) : 6.1
Packing group : III
Marine pollutant : benzalkonium chloride

Section: 15. REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons : Schedule 6

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory
This product has not been evaluated for Chemical Inventory regulations and may contain substances not found on Inventory Lists such as TSCA, EINECS, DSL, etc.. This product should be used under the applicable Research and Development provisions of local notification regulations.

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)
All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

Canadian Domestic Substances List (DSL)
This product contains substance(s) which are found on the Non-Domestic Substances List (NDSL), or are not in compliance with other Canadian Acts.

Japan. ENCS - Existing and New Chemical Substances Inventory
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

China Inventory of Existing Chemical Substances
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Korea. Korean Existing Chemicals Inventory (KECI)
All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

REFERENCES

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Revision Date	:	23.04.2023
Version Number	:	1.1
Prepared By	:	Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **IDCIDE-20**

Synonyms IDCIDE 20

1.2 Uses and uses advised against

Uses BIOCIDE ● DRILLING FLUID ADDITIVE ● WATER TREATMENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Skin Corrosion/Irritation: Category 2
Skin Sensitisation: Category 1
Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

Prevention statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment is advised - see first aid instructions.
P330	Rinse mouth.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage statements

None allocated.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	55566-30-8	259-709-0	18 to 25%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. May evolve carbon oxides, sulphur oxides and phosphates when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls. In a laboratory situation, wear a laboratory coat.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS TO PALE YELLOW LIQUID
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 100°C
Melting point	< 0°C
Evaporation rate	AS FOR WATER
pH	3.0 to 3.5
Vapour density	NOT AVAILABLE
Relative density	1.08
Solubility (water)	SOLUBLE
Vapour pressure	18 mm Hg @ 20°C
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	> 60 % (Water)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	248 mg/kg (rat)	> 2000 mg/kg (rat)	5.5 mg/L/4hrs (rat)

Additional ingredient toxicity values:

TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) (55566-30-8)

TDLo (oral) 650 mg/kg/13 weeks - intermittent (rat)

Skin Contact may result in irritation, redness, pain and rash.

Eye	Contact may result in irritation, lacrimation, pain and redness.
Sensitisation	May cause an allergic skin reaction. This product is not classified as a respiratory sensitiser.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in respiratory irritation, nausea, dizziness, drowsiness and headache.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

75% TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE (55566-30-8):
LC50 (Rainbow Trout) = 119 mg/L/96 hr
LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr
EC50 (Daphnia Magna) = 19 mg/L/48 hr
LC50 (Brown Shrimp) = 340 mg/L/96 hr
LC50 (Mysid Shrimp) = 9.5 mg/L/96 hr
LC50 (Sheepshead Minnow) = 94 mg/L/96 hr
LC50 (Jevenile Plaice) = 86 mg/L/96 hr

Waste Water management
EC50 (Activated Sludge) = 24 mg/L/3 hr

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m^3	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **UNGANI STOCK TANK CRUDE OIL**

Synonyms PETROLEUM HYDROCARBON ● UNGANI CRUDE OIL (FORMERLY)

1.2 Uses and uses advised against

Uses CRUDE OIL ● REFINERY FEEDSTOCK

1.3 Details of the supplier of the product

Supplier name **BURU ENERGY**

Address Level 2, 88 William St, Perth, WA, 6000, AUSTRALIA

Telephone (08) 9215 1800

Fax (08) 9215 1899

Email info@buruenergy.com

1.4 Emergency telephone numbers

Emergency 1800 219 070

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Flammable Liquids: Category 2

Health Hazards

Carcinogenicity: Category 1B

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H225 Highly flammable liquid and vapour.
H350 May cause cancer.

Prevention statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P370 + P378	In case of fire: Use appropriate media to extinguish.

Storage statements

P403 + P233 + P235	Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (w/w)
PETROLEUM (CRUDE OIL) (<0.1% W/W BENZENE)	8002-05-9	232-298-5	>90%
TOLUENE	108-88-3	203-625-9	<0.03%
BENZENE	71-43-2	200-753-7	<0.01%
HYDROGEN SULPHIDE (EVOLVED)	7783-06-4	231-977-3	Not Available

Ingredient Notes Crude oil contains complex hydrocarbon mixtures of paraffinic, olefinic, naphthenic and aromatic compounds.

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use a Type AB (Organic vapour, Inorganic and acid gas) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Highly flammable. May evolve toxic gases (carbon/sulphur oxides, sulphides, hydrocarbons) when heated to decomposition. Vapour may form explosive mixtures with air. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, etc when handling. Earth containers when dispensing fluids.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

3WE

3 Normal Foam (protein based foam that is not alcohol resistant).

W Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate fire protection systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Benzene	SWA [AUS]	1	3.2	--	--
Benzene	SWA [Proposed]	0.2	0.7	--	--
Hydrogen Sulphide	SWA [AUS]	10	14	15	21
Hydrogen Sulphide	SWA [Proposed]	1	1.4	5	7
Toluene	SWA [AUS]	50	191	150	574
Toluene	SWA [Proposed]	20	75	--	--

Biological limits

Ingredient	Determinant	Sampling Time	BEI
BENZENE	S-Phenylmercapturic acid in urine	End of shift	25 µg/g creatinine
	t,t-Muconic acid in urine	End of shift	500 µg/g creatine
TOLUENE	o-Cresol in urine (with hydrolysis)	End of shift	0.3 mg/g creatinine
	Toluene in urine	End of shift	0.03 mg/L
	Toluene in blood	Prior to last shift of workweek	0.02 mg/L

Reference: ACGIH Biological Exposure Indices

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face Wear splash-proof goggles.

Hands Wear PVC or rubber gloves. With prolonged use, wear viton® or nitrile gloves.

Body With prolonged use, wear coveralls.

Respiratory Where an inhalation risk exists, wear a Type AB (Organic and Inorganic gases/vapours) respirator. Where the boiling point is < 65°, use an AX filter type.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	VISCOUS BROWN TO BLACK LIQUID
Odour	CHARACTERISTIC HYDROCARBON ODOUR
Flammability	HIGHLY FLAMMABLE
Flash point	< 15°C
Boiling point	> 35°C
Melting point	21°C
Evaporation rate	NOT AVAILABLE
pH	NOT RELEVANT
Vapour density	NOT AVAILABLE
Relative density	0.8413
Solubility (water)	INSOLUBLE
Vapour pressure	14.8 kPa
Upper explosion limit	6.0 vol% in air (as per Table K1 in AS1940-2004)
Lower explosion limit	1.1 vol% in air (as per Table K1 in AS1940-2004)
Partition coefficient	NOT AVAILABLE
Autoignition temperature	310°C (Estimated)
Decomposition temperature	NOT AVAILABLE
Viscosity	7.4 cSt @ 30°C
Explosive properties	VAPOUR MAY FORM EXPLOSIVE MIXTURES WITH AIR
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

10.6 Hazardous decomposition products
May evolve toxic gases (carbon/sulphur oxides, sulphides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed, in contact with skin, and/or if inhaled. The toxicity profile is dictated by the levels of polycyclic aromatic hydrocarbons (PAHs).

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
TOLUENE	5580 mg/kg (rat)	5000 mg/kg (rabbit)	25.7 - 30 mg/L/4hrs (rat)
BENZENE	930 mg/kg (rat)	> 9400 mg/kg (rabbit, guinea pig)	9980 ppm/7hrs (mouse)
HYDROGEN SULPHIDE (EVOLVED)	--	--	444 ppm (rat)

Skin Contact may result in drying and defatting of the skin, rash and dermatitis.

Eye Contact may result in irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen. This product contains trace amounts of benzene (below that to require classification).

Carcinogenicity May cause cancer. Benzene is classified as carcinogenic to humans (IARC Group 1). This product may contain polycyclic aromatic hydrocarbons (PCAHs), some of which are classified as probably carcinogenic to humans (IARC Group 2A).

Reproductive Not classified as a reproductive toxin. Contains toluene, which is a known human reproductive toxicant, at levels below that required for classification.

STOT - single exposure Over exposure may result in irritation of the nose and throat, coughing, loss of appetite, nausea and vomiting. May evolve irritating/toxic hydrogen sulphide gas which can cause pulmonary oedema, unconsciousness and death.

STOT - repeated exposure Available evidence from animal studies indicate that repeated or prolonged exposure to this material could result in adverse skin effects. Effects to lungs and central nervous system have also been reported. Chronic exposure to benzene may result in loss of appetite, tremors, anaemia (bone marrow depression), liver and kidney damage. However, repeated exposure to hydrogen sulphide may result in nerve paralysis/damage, heart damage and neurological effects.

Aspiration Aspiration into the lungs may result in chemical pneumonitis and pulmonary oedema.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
This product can float on water, restricting oxygen exchange with possible asphyxiation of aquatic life.

12.2 Persistence and degradability
Major constituents are inherently biodegradable, but may contain components that may persist in the environment.

12.3 Bioaccumulative potential
Contains constituents with the potential to bioaccumulate.

12.4 Mobility in soil

Contains volatile constituents. Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day. If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved waste contractor. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required). Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1267	1267	1267
14.2 Proper Shipping Name	PETROLEUM CRUDE OIL	PETROLEUM CRUDE OIL	PETROLEUM CRUDE OIL
14.3 Transport hazard class	3	3	3
14.4 Packing Group	II	II	II

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code 3WE

GTEPG 3A1

EmS F-E, S-E

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

MINERAL OILS - NON REFINED: Animal experiments and human experience have shown cancer risks when handling mineral oils. Such cases are reported to have occurred in conditions where poor occupational hygiene practices resulted in prolonged skin contact. CLEANING MINERAL OIL CONTAMINATED CLOTHING: Cleaners are advised that when cleaning oil contaminated clothing it is essential that freshly distilled solvent is used for each batch, including final rinse, as even filtered solvent will leave oil residues.

EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

CHEMICAL DISCLOSURE REPORT

A. SYSTEM DETAILS:

OPERATOR:	Buru Energy
PROJECT/WELL	Western Australia
SYSTEM	Drilling System: Western Australia
TOTAL VOLUME OF SYSTEM	3,500 m^3

B. PRODUCT LIST

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
Water	N/A	Base fluid	52.23%	No hazard	No
POLYPAC (all grades)	Schlumberger	Fluid loss additive	1.272%	Acute Toxicity: Poly anionic Cellulose LD50 Oral (Rat): = 27000 mg/kg, LD50 Dermal (Rabbit): >2 g/kg, LC50 Inhalation (Rat): > 5800 mg/m3, (4h) Chronic Toxicity: No known carcinogenic properties or chronic impacts Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Biodegredation/Bioaccumulation: Product is biodegradable, does not bio accumulate.	Yes
EMI-1797	Schlumberger	Clay Control Agent	4.753%	Acute Toxicity: Complex amine based compounds LD50 Oral (Rat): = 1500 mg/kg, LD50 Dermal (Rabbit): =200.2 g/kg Chronic Toxicity: May cause an allergic skin reaction. No known carcinogenic or mutagenic properties, or reproductive hazards. Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Biodegredation/Bioaccumulation: Product is biodegradable, does not bio accumulate.	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
Bentonite Extender D20	Schlumberger	Extender	2.983%	Acute Toxicity: Crystalline Silica LD50 Oral (Rat): = 500 mg/kg. Chronic toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC as Group 1 carcinogen. Product does not contain any known or suspected reproductive or developmental hazards. Ecotoxicity: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h) Toxicity to Algae: EC50: >1000 mg/L (120 h) Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
Caustic Soda M2	Schlumberger	pH additive	0.163%	Acute Toxicity: Sodium Hydroxide Ld50 Dermal (Rabbit): 1350 mg/kg Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to fish, algae, or invertebrates. Toxicity to fish LC60: 45.4 mg/L (96h) Biodegredation/Bioaccumulation: Not applicable; inorganic chemical	Yes
Soda Ash	Schlumberger	Buffer	0.082%	Acute Toxicity: Sodium carbonate LD50 Oral (Rat): > 4090 mg/kg, LC50 Inhalation (Rat): >2300 mg/m3 (1 h) Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. LC50(Lepomis macrochirus): = 300 mg/L (96 h), LC50(Pimephales promelas): 310-1220 mg/L (96 h), EC50(Nitzchia): = 242mg/L (120 h), EC50 (Daphnia magna) = 265 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
Potassium Chloride M117	Schlumberger	Clay Control Agent	4.881%	Acute Toxicity: None Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to fish, algae, or invertebrates. Biodegredation/Bioaccumulation: Not applicable; inorganic chemical	Yes
Sodium Chloride Brine	Schlumberger	Weighting Agent	4.639%	Acute Toxicity: LD50 Oral(Rat) :3000 mg/kg:, LD50 Dermal (Rat) :10010 mg/kg Chronic Toxicity:No known sensitiezing, mutagentic, carcinogenic or reproductive hazards. Ecotoxicity:This product is not considered toxic to algae, fish, or invertebrates LC50 (Fish): 5560-12946 mg/L, LC50 (invertebrates): 340.7-1000 mg/L Biodegredation/Bioaccumulation: Inorganic chemical	Yes
MAGNESIUM OXIDE	Schlumberger//Redox	pH buffer	0.163%	Product Acute toxicity: None known Component Acute toxicity: LD50 Ingestion: 3,870 mg/kg & 3,990 mg/kg LC50 Inhalation: >3.88 mg/L Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecotoxicity: No information available.	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				Product is not considered toxic to fish, algae, or invertebrates. Product contains no substance considered to be persistent or bioaccumulating.	
KLA-STOP	Schlumberger	Clay Control Agent	4.753%	Acute toxicity Reaction products of Propane- 1,2-diol: LD50 oral (rat): 2885 mg/kg, LD50 Dermal (rabbit): 2979 mg/kg, 1ml/kg. LC50 inhalation (Rat 6h): 0.74 mg/L Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecological Information: Toxicity to Fish (96h): >700 mg/L Toxicity to algae (72h): >700 mg/L Toxicity to Invertebrates (48h): >1001 mg/L Not biodegradable. Does not bioaccumulate	Yes
SAFE-COR	Schlumberger	corrosion inhibitor	0.271%	Acute Toxicity: Ethanol,2,2'oxybis-reaction products with ammonia, mopholine derivs, residues: LD50 Oral (Rat): > 1500 mg/kg Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecotoxicity: Ethanol,2,2'oxybis-reaction products with ammonia, mopholine derivs, residues: LC50(fish): >45 mg/L (96 h) LC50(algae): 45 mg/L (72 h) EC50(invertebrates): = >100 mg/L (48 h) Biodegredation/Bioaccumulation: Biodegradable. No bioaccumulation expected.	Yes
SAFE-SCAV NA	Schlumberger	Oxygen scavenger	0.148%	Acute Toxicity: Ammonium Hydrogensulfite LD50 Oral (Rat): = 2746 mg/kg, > 2150 mg/kg LD50 Dermal: >2000 mg/kg (24 h) LC50 Inhalation: 5.5 mg/L (4 h) Sulphur dioxide LC50 Inhalation (Rat): 2500 ppm (1 h) Chronic Toxicity: No known carcinogenic, reproductive, or mutagenic effects. Repeated or prolonged contact may cause allergic reactions in very susceptible persons. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. Ammonium Hydrogensulfite EC50 (Algae): = 43.8 mg/L (72 h) LC50(Fish): > 464 mg/L (96 h) EC50 (daphnia and invertebrates) =89 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
SODIUM BICARBONATE	Schlumberger	Treatment for hardness	0.030%	Acute Toxicity: Sodium Chloride LD50 Oral (Rat): = 4220 mg/kg Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Toxicity to Fish: LC50: 8250-9000 mg/L (96h), Toxicity to Algae EC50: 650 mg/L (120h) Toxicity to invertebrates: EC50: 2350 (48h) Biodegredation/Bioaccumulation:	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				Not applicable; inorganic chemical	
SODIUM FORMATE BRINE	Schlumberger	SODIUM FORMATE	7.107%	Acute Toxicity: Sodium Formate LD50 Oral (Rat): = 11200 mg/kg, LD50 Dermal (Rabbit): 2002 mg/kg Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to fish, algae, or invertebrates Biodegredation/Bioaccumulation: Product is biodegradable	Yes
SP-101	Schlumberger	Fluid Loss Reducer	0.286%	Acute Toxicity:None Chronic Toxicity:No known sensitizing, mutagenic, carcinogenic or reproductive hazards. Ecotoxicity:This product is not considered toxic to algae, fish, or invertebrates Biodegredation/Bioaccumulation: Product isnot readily biodegradable, not expected to bioaccumulate	Yes
DEEPCLEAN NS	Schlumberger	Surfactant	0.679%	Acute Toxicity: 2-butoxyethanol: LD50 Oral (Rat): 470 mg/kg, LD50 Dermal (rabbit): 99 mg/kg, LC50 Inhalation (Rat), 450-486 ppm Distallates, petroleum, hydrotreated light: LD50 Oral (Rat): >5g/kg, LD50 Dermal (Rabbit): >2g/kg, LC50 Inhalation (Rat), >5.2 mg/L Chronic Toxicity: No known carcinogenic, or mutagenic, or reproductive effects. May cause sensitization by skin contact Ecotoxicity: 2-butoxyethanol: EC50 (fish): 2950 mg/L (96h), EC50 (invertebrates): 1698-1940 mg/L (48h) Distallates, petroleum, hydrotreated light: EC50 (fish): 2.2-45 mg/L (96h), EC50 (invertebrates): 4720 mg/L (48h) D-Glucopyranose, oligomeric, c8-10 glycosides: EC50(Fish): 170 mg/L, EC50(algae): 37 mg/L, EC50 (invertebrates): >100 mg/L Biodegredation/Bioaccumulation: Biodegradable, contains potentially bioaccumulating substances	Yes
POROSEAL	Schlumberger	Fluid loss additive	4.753%	Acute Toxicity: None Chronic Toxicity: May cause sensitization by skin contact. Not known to be carcinogenic, mutagenic. No known reproductive or developmental hazards Ecotoxicity: 5-chloro-2-methyl-4-isothiazolin-3one and 2-methyl-4-isothiazolin-3-one: : LC50 (Fish): 1.6 mg/L (96h), EC50 (Algae): 0.03-0.13 mg/L (120h), EC50(Invertebrates): 0.12-0.3 (48h) Biodegredation/Bioaccumulation: Not readily biodegradable, not considered to be bioaccumulating.	Yes
KLA-HIB	Schlumberger	Clay Control Agent	0.538%	Acute Toxicity: None Chronic Toxicity: May cause allergic skin reaction. Not known to be carcinogenic, mutagenic. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to fish, algae, or invertebrates Biodegredation/Bioaccumulation: Not readily biodegradable, not considered to be bioaccumulating	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
Nuosept 78	Troy	Biocide	0.148%	Acute Toxicity:LD50 Oral (Rat- Female): = 2000 mg/kg LD50 Dermal (Rat): >1009-3950 mg/kg Chronic Toxicity: No known carcinogenic, reproductive, or teratogenic effects. Skin sensitizing Ecotoxicity: EC50 (Daphnia): 10-100 mg/L (48 h) LC50 (Fish): 10-100 mg/L (96 h) Biodegredation/Bioaccumulation: Product is biodegradable, has low bioaccumulative potential	Yes
BARITE (all grades)	Schlumberger	BARITE	5.233%	Acute Toxicity: Barite: LD50 Oral (Rat): >15000 mg/kg Crystalline Silica: LD50 Oral (Rat): = 500 mg/kg. Chronic toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC as Group 1 carcinogen. or developmental Chronic Toxicity: Not known to be mutagenic or sensitizing. Crystalline silica dust is listed by IARC as Group 1 carcinogen. No known reproductive or developmental hazards. Ecotoxicity: Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h) Toxicity to Algae: EC50: >1000 mg/L (120 h) Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
VeraVis	Schlumberger	Viscosifier	1.802%	Acute Toxicity: 2-methylpropan-2-ol LD50 Oral (Rat): =2200 mg/kg LD50 Dermal (Rabbit): >2 g/kg LC50 Inhalation (Rat): >10000 ppm (4 h) Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, sensitizing, or mutagenic effects. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. 2-methylpropan-2-ol EC50 (Algae): = 6130-6700 mg/L (72 h) LC50(Fish): > 1000 mg/L (96 h) EC50 (daphnia and invertebrates) =4607 - 6577 mg/L (48 h) Biodegredation/Bioaccumulation: Not readily biodegradable, does not bioaccumulate	Yes
PTS-200	Schlumberger	Thermal extender	2.848%	Acute toxicity 2-aminoethanol: LD50 oral (rat): 1720 mg/kg, LD50 Dermal (rabbit): 1000 mg/kg, 1ml/kg. LC50 inhalation (Rat 6h): 1.3 mg/L Contact: Causes serious eye damage. May cause irreversible damage to eyes. Harmful in contact with skin, may be absorbed through skin, Harmful if swallowed. Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecological Information: Toxicity to Fish (96h): 200-227 mg/L (Oncorhynchus mykiss), 300-1000 mg/L (Lepomis macrochirus), 3684 mg/L (Brachydaniorerio) Toxicity to algae (72h): 15 mg/L Toxicity to Invertebrates (48h): 65 mg/L	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				Not readily biodegradable. Does not bioaccumulate	
DUO-VIS	Schlumberger	Viscosifier	0.239%	Acute Toxicity:None Chronic Toxicity:No known carcinogenic or reproductive hazards. Contains a known or suspected mutagen. Contains glyoxal; may prodcue an allergic reaction Ecotoxicity:This product is not considered toxic to algae, fish, or invertebrates Biodegredation/Bioaccumulation: Product is biodegradable, doe not bioaccumulate	Yes
Total			**~100%**		
DRISCAL D	**Drilling Specialities Company**	**Viscosifier**	**0.05%**	**Toxicological information: The product contains no substances classified as hazardous to health in concentrations which should be taken into account. Ecotoxicity information: Toxicity to fish: LC50: >1,800 mg/L Scophthalmus maximus (96h) Toxicity to daphnia and other aquatic invertebrates: LC50: 599mg/L Acartia tonsa (48h) Toxicity to algae: EC50: 2,693 mg/L Skeletonema costatum (72h) Biodegredation/Bioaccumulation: Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification. Accumulation in aquatic organisms is unlikely. The polymer is too large to be bioavailable. This material is not expected to be harmful to aquatic organisms. No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.**	**Yes**
M-I-X II (all grades)	**Schlumberger**	**Loss Control material**	**0.105%**	**Acute Toxicity: Sodium carbonate: LD50 Oral (Rat): > 5 g/kg, LD50 Dermal (Rabbit): >2g/kg, LC50 Inhalation (Rat): >5800 mg/m3, Crystalline quartz, silica: LD50 Oral (Rat): 500 mg/kg Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. containts a known or suspected carcinogen (crystalline silica dust) Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. Biodegredation/Bioaccumulation: No product level data available**	**Yes**
NUT PLUG (all grades)	**Schlumberger**	**Loss Control material**	**0.055%**	**Acute Toxicity: Cellulose"LD50 Oral (Rat): > 5g/kg, Dd50 Dermal (Rabbit): >2 g/kg, LC50 Inhalation (Rat): > 5800 mg/m3, (4h) Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h), Toxicity to Algae: EC50: >1000 mg/L (120 h) , Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable: Inorganic chemical**	**Yes**

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
STARGLIDE	Schlumberger	Lubricant	0.06%	Acute Toxicity: Poly(oxy-1,2,ethanediyl),a-buthyl-2-hydroxy LD50 Oral (Rat): > 4090 mg/kg, LD50 Oral: > 2000 mg/kg Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. LC50(fish): >100 mg/L (96 h) LC50(algae)> 100 mg/L (96 h) EC50(invertebrates): = >100 mg/L (120 h) Biodegredation/Bioaccumulation: Product is Biodegradable. Contains potentially bioaccumulating substances	Yes
G-SEAL PLUS	Schlumberger	Loss Control material	0.085%	Acute Toxicity: Graphite : LD50 Oral (Rat): = 10010 mg/kg Chronic Toxicity: Not known to be mutagenic or sensitizing. Crystalline silica dust is listed by IARC as Group 1 carcinogen. No known reproductive or developmental hazards. Ecotoxicity: Graphite: LC50 (Fish): >100 mg/L Crystalline Silica:LC50(Fish): = 10000 mg/L (96 h), EC50 (algae): >1000 mg/L (120 h) EC50 (invertebrates) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
SAFE-CARB (All Grades)	Schlumberger	Loss Control material	0.71%	Acute Toxicity: Calcium Carbonate: LD50 Oral (Rat): 6450 mg/kg Crystalline Silica: LD50 Oral (Rat): = 500 mg/kg. Chronic toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC as Group 1 carcinogen. or developmental Chronic Toxicity: Not known to be mutagenic or sensitizing. Crystalline silica dust is listed by IARC as Group 1 carcinogen. No known reproductive or developmental hazards. Ecotoxicity: Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h) Toxicity to Algae: EC50: >1000 mg/L (120 h) Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
SAFE-COR	Schlumberger	Corrosion inhibitor	0.105%	Acute Toxicity: Ethanol,2,2'oxybis-reaction products with ammonia, mopholine derivs, residues: LD50 Oral (Rat): > 1500 mg/kg Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, or mutagenic effects. Ecotoxicity: Ethanol,2,2'oxybis-reaction products with ammonia, mopholine derivs, residues: LC50(fish): >45 mg/L (96 h) LC50(algae): 45 mg/L (72 h) EC50(invertebrates): = >100 mg/L (48 h) Biodegredation/Bioaccumulation: Biodegradable. No bioaccumulation expected.	Yes
SAFE-SCAV CA	Schlumberger	Oxygen scvenger	0.035%	Acute Toxicity: > 5g/kg LD50 Oral (RAT) Product component(s) not classified as environmentally hazardous. Biodegradation/Bioaccumulative: No product level data available	Yes
SAPP	Schlumberger	pH Addtitve	0.055%	Acute Toxicity: Disodium dihydrogen diphosphate = 1800 mg/kg LD50 Oral (Rat)	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				> 0.58 mg/L LC50 Inhalation (Rat) 4 h Biodegradation/Bioaccumulation: Not applicable - Inorganic chemical	
DRISTEMP	Drilling Specialities Company	Viscosifier/Fluid loass additive	0.10%	Acute Toxicity: 1-vinylpyrrolidin-2-one: LD50 Oral (Rat): 830 mg/kg, LD50 Dermal (rabbit): 560 mg/kg Prop-2-enamide: LD50 Oral (Rat): 2g/kg, LD50 Dermal (Rabbit): 6300 µL/kg Chronic Toxicity: No known sensitizing, carcinogenic. or mutagenic effects, not suspected to cause reproductive or developmental toxicity 1-vinylpyrrolidin-2-one: LC50 (algae): 780 mg/L (96h), LC50 (algae): 45 mg/L (48h), Socium Acrylate (impurity): LC50 (fish): 27 mg/L (96h) Prop-2-enamide: LC50 (Fish): 81-150 mg/L (96h), LC50 (algae): 98 mg/L (48h) Biodegredation/Bioaccumulation: No product level data	Yes
DEFOAM-A	Schlumberger	Defoamer	0.12%	Acute Toxicity: 2,2,4-trimethyl-1,3-pentanediol diisobutryate: LD50 Oral (Rat): >3200 mg/kg, LD50 Dermal (rabbit): >2000, LC50 Inhalation (Rat), > 5.3 mg/L (6h) 1,3-pentanediol,2,2,4-trimethyl: LD50 Oral (Rat): 2g/kg, LD50 Dermal: no data available, LC50 Inhalation (Rat), >4.5 mg/L (6h) Chronic Toxicity: No known sensitizing, carcinogenic, or mutagenic effects. Suspected of damaging the unborn child. Ecotoxicity: 2,2,4-trimethyl-1,3-pentanediol diisobutryate: EC50 (fish): >1.55 mg/L Pimephales promelas (96h), EC50 (algae) > 7.49mg/L (72h) literature data, EC50 (invertebrates): >1.46 mg/L Daphnia magna (48h) 1,3-pentanediol,2,2,4-trimethyl: EC50 (fish): >700 mg/L Lepomis macrochirus (96h), EC50 (algae) > 100 mg/L (72h) literature data, EC50 (invertebrates): >100 mg/L (48h) literature data. Biodegredation/Bioaccumulation: No product level data	Yes
FORM-A-BLOK	Schlumberger	Loss Control material	0.135%	Acute Toxicity: Polyvinyl alcohol: LD50 Oral (Rat): 23854 mg/kg Cellullose: LD50 Oral (Rat): = 5 g/kg. LD50 Dermal (Rabbit): >2g/kg, LD50 Inhalation (Rat): >5800 mg/m3 4h. Chronic toxicity: Product contains no components known to be sensitizing or mutagenic, or carcinogenic. No known reproductive or developmental hazards. Ecotoxicity: Product is not considered toxic to fish, algae, or invertebrates. Biodegredation/Bioaccumulation: Not readily biodegradable, does not bioaccumulate.	Yes
Nuosept 78	Troy	Biocide	0.03%	Acute Toxicity:LD50 Oral (Rat- Female): = 2000 mg/kg LD50 Dermal (Rat): >1009-3950 mg/kg Chronic Toxicity: No known carcinogenic, reproductive, or teratogenic effects. Skin sensitizing Ecotoxicity: EC50 (Daphnia): 10-100 mg/L (48 h) LC50 (Fish): 10-100 mg/L (96 h) Biodegredation/Bioaccumulation: Product is biodegradable, has low bioaccumulative potential	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
BARITE	Schlumberger	Weighting Agent	1.69%	Acute Toxicity: Barite: LD50 Oral (Rat): >15000 mg/kg Crystalline Silica: LD50 Oral (Rat): = 500 mg/kg. Chronci Toxicity: Not known to be mutagenic or sensitizing. Crystalline silica dust is listed by IARC as Group 1 carcinogen. No known reproductive or developmental hazards. Ecotoxicity: Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h) Toxicity to Algae: EC50: >1000 mg/L (120 h) Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
WALNUT NUT PLUG (all grades)	Schlumberger	Loss Control material	0.055%	Acute Toxicity: Cellulose LD50 Oral (Rat): > 5g/kg Ld50 Dermal (Rabbit): >2 g/kg LC50 Inhalation (Rat): > 5800 mg/m3, (4h) Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h), Toxicity to Algae: EC50: >1000 mg/L (120 h) , Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable: Inorganic chemical	Yes
KWIK-SEAL (All Grades)	KELCO	Loss Control material	0.09%	Acute Toxicity: None Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: **Wood, wood fibers, ground hulls or shells - CAS NUMBER-N/A** 96-Hour LC50 Crustacea 1000000 ppm Acute **Synthetic flakes - CAS NUMBER-N/A** 96-Hour LC50 Crustacea 1000000 ppm Acute Biodegredation/Bioaccumulation: Expected to biodegrade, not suspected to bioaccumulate.	Yes
CITRIC ACID	Schlumberger	pH Addtitve	0.065%	Acute Toxicity Citric Acid: LD50 Oral (Rat): 3000 mg/kg 1516 mg/L LC50 (Lepomismacrochirus) = 96 h 120 mg/L EC50 (Daphnia magna) = 72 h Biodegradation/Bioaccumulation No product level data available	Yes
DUO-VIS	Schlumberger	Viscosifier	0.095%	Acute Toxicity:None Chronic Toxicity:No known carcinogenic or reproductive hazards. Contains a known or suspected mutagen. Contains glyoxal; may prodcue an allergic reaction Ecotoxicity:This product is not considered toxic to algae, fish, or invertebrates Biodegredation/Bioaccumulation: Product is biodegradable, doe not bioaccumulate	Yes
DUAL-FLO HT	Schlumberger	Fluid loss additive	0.095%	Acute Toxicity: None Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, sensitizing, or mutagenic effects. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. Biodegredation/Bioaccumulation:Biodegradable, does not bioaccumulate	Yes
FORM-A-BLOK AS	Schlumberger	Loss Control material	0.055%	Acute Toxicity: Cellulose Fibre: LD50 Oral: 5005 mg/kg, LD50 Dermal: 2002 mg/kg,	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				Titanium Dioxide: LD50 Oral: 10010 mg/kg Chronic Toxicity: Not known to be mutagenic, or sensitizing. No known reproductive or developmental hazards. Contains a known or suspected carcinogen Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h), Toxicity to Algae: EC50: >1000 mg/L (120 h) , Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not available	
Fybecarb	MI-SWACO	Loss Control material	0.055%	Acute Toxicity: Calcium Carbonate: LD50 Oral: 6,450 mg/kg (Rat), LD50 Dermal: >2,000 mg/kg (Rat), LC50 Inhalation: >3 mg/L (Rat) (4h) Cellulose: LD50 Oral: >5 g/kg (Rat), LD50 Dermal: >2,000 mg/kg (Rabbit), LC50 Inhalation: >5,800 mg/m^3 (Rat) (4h) Crystalline impurity: No data available Chronic Toxicity: Not known to be mutagenic, or sensitizing. No known reproductive or developmental hazards. Contains a known or suspected carcinogen: Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled. Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10,000 mg/L (96 h), Toxicity to Algae: EC50: >1,000 mg/L (72 h) , Toxicity to Invertebrates: EC50 (Daphnia magna) >10,000 mg/L (24 h) Biodegredation/Bioaccumulation: Product / substance is inorganic.	Yes
Potassium Formate Brine	Schlumberger	Weighting Agent	2.69%	Acute Toxicity: None Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Potassium formate: Toxicity to Fish: LC50 > 1000 mg/L, Toxicity to Algae 1000 mg/L, Toxicity to Invertebrates > 100 mg/L Biodegredation/Bioaccumulation: Readitly biodegradable, not suspected to bioaccumulate.	Yes
Sodium Chloride Brine	Schlumberger	Weighting Agent	3.11%	Acute Toxicity: None Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, sensitizing, or mutagenic effects. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. Biodegredation/Bioaccumulation:Biodegradable, does not bioaccumulate	Yes
Sodium Formate Brine	Schlumberger	Weighting Agent	7.107%	Acute Toxicity: Sodium Formate: LD50 Oral = 11200 mg/kg Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Potassium formate: Toxicity to Fish: LC50 = 5000 mg/L, , Toxicity to Invertebrates > 1000 mg/L Biodegredation/Bioaccumulation: No data available	Yes
Soltex Additive	Drilling Specialties Company	Shale Control	0.13%	Chronic Toxicity: Carcinogenicity, Category 1A, Inhalation. Chronic health hazard. Ecotoxicity: This material is not expected to be harmful to aquatic organisms. Biodegredation/Bioaccumulation: This material is not expected to be readily biodegradable	Yes
IDCAP D	Schlumberger	Shale Encapsulator	0.10%	Acute Toxicity: None Chronic Toxicity: No known sensitizing, carcinogenic, reproductive, sensitizing, or mutagenic effects. Ecotoxicity: This product is not considered toxic to algae, fish, daphnia, or invertebrates. Biodegredation/Bioaccumulation: Biodegradable, does not bioaccumulate	Yes

<table>
<tr><th>Trade name</th><th>Supplier</th><th>Purpose</th><th>Product in system fluid (%)</th><th>Toxicity & Ecotoxicity Info</th><th>SDS attached</th></tr>
<tr><td>G-SEAL (All Grades)</td><td>Schlumberger</td><td>Loss Control material</td><td>0.10%</td><td>Acute Toxicity:
Graphite : LD50 Oral (Rat): = 10010 mg/kg
Chronic Toxicity: Not known to be mutagenic or sensitizing. Crystalline silica dust is listed by IARC as Group 1 carcinogen. No known reproductive or developmental hazards.
Ecotoxicity: Graphite: LC50 (Fish): >100 mg/L
Crystalline Silica:LC50(Fish): = 10000 mg/L (96 h), EC50 (algae): >1000 mg/L (120 h) EC50 (invertebrates) >10000 mg/L (48 h)
Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.</td><td>yes</td></tr>
<tr><td>CALCIUM CARBONATE Including CIRCAL and OMYACARB Products</td><td>OMYA</td><td>Bridging Material</td><td>2.645%</td><td>Toxicity:
Component – Calcium carbonate: no significant risk factors have been found for this product. Available data indicates that this product is not harmful.
Component – Silica: may cause cancer by inhalation – Carcinogenicity category 1A, specific target organ toxicity (repeated exposure) – category 1.

Ecotoxicity:
This product is unlikely to adversely effect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities. Expected to not be an environmental hazard.

Biodegredation/Bioaccumulation: No data available.</td><td>Yes</td></tr>
<tr><td>KLA-GARD</td><td>Schlumberger</td><td>Shale Inhibition</td><td>1.00%</td><td>Acute Mammalian Toxicity
LD50 (oral) =3400 mg/kg Rat
Acute Toxicity
LC50(96hr) Fish: >10000 mg/L
EC50 (48hr) Daphnia: 320 mg/L
EC50 (72hr) Algae: 500 mg/L</td><td>Yes</td></tr>
<tr><td>ASPHASOL SUPREME (GBL041)</td><td>Schlumberger</td><td>Shale inhibitor / Fluid loss reducer</td><td>0.475%</td><td>Toxicity
The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that
large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Toxicity to algae
This product is not considered toxic to algae.
Toxicity to fish
This product is not considered toxic to fish.
Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates
<table>
<tr><th rowspan="2">Substance</th><th colspan="2">Bio-accumulation</th><th rowspan="2">Molecular Weight</th><th colspan="2">Bio-degradation</th><th colspan="4">Toxicity</th></tr>
<tr><th>Log P_{OW} (OECD 117)</th><th>OECD 306 (% in 28 days)</th><th>OECD 301B (% in 28 days)</th><th>Skeletonema Algae (72 h EC_{50} mg/l)</th><th>Acartia Crustacean (48 h LC_{50} mg/l)</th><th>Scophthalmus Fish (96 h LC_{50} mg/l)</th><th>Corophium (10d LC_{50} mg/Kg dry sediment)</th></tr>
<tr><td>1</td><td>0</td><td>>700</td><td>0</td><td>-</td><td>>1000</td><td>>1000</td><td>>1000</td><td>>10,000</td></tr>
<tr><td>2</td><td colspan="8">PLONOR</td></tr>
</table>
<table>
<tr><th>Chemical Name</th><th>Toxicity to fish</th><th>Toxicity to algae</th><th>Toxicity to daphnia and other aquatic invertebrates</th></tr>
<tr><td>Crystalline silica (impurity)</td><td>LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h</td><td>EC50: > 1000 mg/l 72h</td><td>LC50 Daphnia manga (Water flea): > 10000 mg/l 24h</td></tr>
</table>
Persistence and degradability
Product is not biodegradable.
Bioaccumulative potential
Does not bioaccumulate.</td><td>Yes</td></tr>
<tr><td>DUO-VIS</td><td>Schlumberger</td><td>Viscosifier</td><td>0.145%</td><td>Acute Mammalian Toxicity
Glyoxal (1%)Rat (oral) LD50: 3300 mg/kg</td><td>Yes</td></tr>
</table>

<table>
<tr><th>Trade name</th><th>Supplier</th><th>Purpose</th><th>Product in system fluid (%)</th><th>Toxicity & Ecotoxicity Info</th><th>SDS attached</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Rat (inhalation) LC50 (3-4 h): 2410 mg/m3
Chronic Toxicity
ACGIH Carc New: A4
Aquatic Toxicity
Glyoxal (1%)Pimephale spromelas LC50 (96h): 215 mg/L
Leuciscusidus LC50 (96h): 460 - 680 mg/L
Desmodesmus subspicatus EC50 (72 h):500 mg/L
Pseudokirchneriella subcapitata EC50 (96 h): 348.59 mg/L
Desmodesmus subspicatus EC50: 96 h 500 mg/L
Daphnia magna EC50 (48 h): 404 mg/L

Skeletonema costatum EC50 (72h): 207 mg/L
Acartia tonsa LC50 (48h): 259 mg/L
Scophthalmus maximus LC50 (96h): >1000 mg/L

Biodegradation:
Glyoxal (1%)Ready Biodegradation
Biodegradation: 49% (OECD 306)

Bioaccumulation:
Glyoxal
Octanol/Water Partition Coefficient
Log Pow (OECD 117): <0 (MW <700)</td><td></td></tr>
<tr><td>LIME</td><td>Schlumberger</td><td>Chemical Additive</td><td>0.455%</td><td>Acute Mammalian Toxicity
<table><tr><th>Chemical Name</th><th>LD50 Oral</th><th>LD50 Dermal</th><th>LC50 Inhalation</th></tr><tr><td>Calcium hydroxide</td><td>= 7340 mg/kg (Rat)</td><td>> 2500 mg/kg (Rat)</td><td>> 6.04 mg/L (Rat) 4 h</td></tr></table>Chronic Toxicity
No known carcinogenic (R40, R45, R49), chronic (R33, R39, R48, R68), mutagenic (R46) or reproductive (R60, R61, R62, R63, R64) effects for this product.

Aquatic Toxicity
Gambusia affinis LC50 (96 h): 160 mg/L
OSPAR PLONOR Listed

Biodegradation/Bioaccumulation
Not applicable – inorganic chemical</td><td>Yes</td></tr>
<tr><td>STARGLIDE</td><td>Schlumberger</td><td>Lubricant</td><td>4.545%</td><td>Acute Toxicity:
Poly(oxy-1,2,ethanediyl),a-buthyl-2-hydroxy
LD50 Oral (Rat): > 4090 mg/kg, LD50 Oral: > 2000 mg/kg
Chronic Toxicity:
No known sensitizing, carcinogenic, reproductive, or mutagenic effects.
Ecotoxicity:
This product is not considered toxic to algae, fish, daphnia, or invertebrates.
LC50(fish): >100 mg/L (96 h) LC50(algae)> 100 mg/L (96 h) EC50(invertebrates): = >100 mg/L (120 h)
Biodegredation/Bioaccumulation:
Product is Biodegradable. Contains potentially bioaccumulating substances</td><td>Yes</td></tr>
<tr><td>POLYPAC-All Grades</td><td>Schlumberger</td><td>FLC</td><td>0.285%</td><td>Acute Toxicity:
Poly anionic Cellulose</td><td>Yes</td></tr>
</table>

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				LD50 Oral (Rat): = 27000 mg/kg, LD50 Dermal (Rabbit): >2 g/kg, LC50 Inhalation (Rat): > 5800 mg/m3, (4h) Chronic Toxicity: No known carcinogenic properties or chronic impacts Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Biodegredation/Bioaccumulation: Product is biodegradable, does not bio accumulate.	
POLY-PLUS DRY	MI-SWACO Schlumberger	Shale Encapsulation	0.33%	Acute Mammalian Toxicity Rat (oral) LD50: 500 mg/kg (Mixture) Rat (dermal) LD50: 500 mg/kg (Mixture) Rabbit (dermal) LD50: 1680 µL/kg Chronic Toxicity ACGIH Carc New: A3 IARC Group 1 or 2: Group 2A; Monograph 60 OSHA listed carcinogens: listed Aquatic Toxicity **12.1 Toxicity** The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. **Toxicity to algae** IC50/Algae/72 hrs. : > 100 mg/L (OECD 201) (Mixture). **Toxicity to fish** LC50/Danio rerio and Fathead minnow/96 hrs. : > 100 mg/L (OECS 203) (Mixture). **Toxicity to daphnia and other aquatic invertebrates** EC50/Daphina/48 hrs. : > 100 mg/L (OECD 201) (Mixture). Biodegradation: Ready Biodegradation Biodegradation: 15% (OECD 306) Bioaccumulation: Unlikley to bioaccumulate with MW>700	Yes
BARITE	MI-SWACO Schlumberger	Weighting Agent	1.53%	Acute Toxicity: Barite: LD50 Oral (Rat): >15000 mg/kg Crystalline Silica: LD50 Oral (Rat): = 500 mg/kg. Chronic toxicity: Product contains no components known to be sensitizing or mutagens. Crystalline silica dust is listed by IARC as Group 1 carcinogen. or developmental Chronic Toxicity: Not known to be mutagenic or sensitizing. Crystalline silica dust is listed by IARC as Group 1 carcinogen. No known reproductive or developmental hazards. Ecotoxicity: Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h) Toxicity to Algae: EC50: >1000 mg/L (120 h) Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable- Inorganic chemical.	Yes
BENTONITE	MI-SWACO Schlumberger	Viscosifier / FLC	0.6535%	Acute Mammalian Toxicity (Crystalline silica impurity) Rat (oral) LD50 :No Available Data Bentonite Rat (oral) LD50 > No Available Data Chronic Toxicity Not carcinogenic (Cat 1* & 2), mutagenic (Cat 1 & 2) or toxic for reproduction (Cat 1, 2 & 3).	Yes

<table>
<tr><th>Trade name</th><th>Supplier</th><th>Purpose</th><th>Product in system fluid (%)</th><th>Toxicity & Ecotoxicity Info</th><th>SDS attached</th></tr>
<tr><td></td><td></td><td></td><td></td><td>*IARC Monographs, Vol 68 (1997) concludes that there is sufficient evidence that prolonged inhaled crystalline silica in the form of quartz or crystobalite from occupational sources causes cancer in humans. IARC classification Group 1. Due to the quantity and composition, the health hazard is small.

Aquatic Toxicity
OSPAR PLONOR Listed ingredients; bentonite, quartz crystalline silica
OCNS Listed: E
Toxicology data for the components
<table>
<tr><th>Chemical Name</th><th>Toxicity to fish</th><th>Toxicity to algae</th><th>Toxicity to daphnia and other aquatic invertebrates</th></tr>
<tr><td>Crystalline silica (impurity)</td><td>LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h</td><td>EC50: > 1000 mg/l 72h</td><td>LC50 Daphnia manga (Water flea): > 10000 mg/l 24h
LC50 Daphnia manga (pulga Aquatica): > 10000 mg/l 24h</td></tr>
</table>
Natural product - exempted under the Chemical Disclosure Guidelines
Biodegradation / Bioaccumulation
Not applicable – inorganic materials</td><td></td></tr>
<tr><td>SODIUM CHLORIDE BRINE</td><td>MI-SWACO SCHLUMBERGER</td><td>Weighting Agent</td><td>3.11%</td><td>Acute Toxicity: LD50 Oral(Rat) :3000 mg/kg:, LD50 Dermal (Rat) :10010 mg/kg
Chronic Toxicity:No known sensitiezing, mutagentic, carcinogenic or reproductive hazards.
Ecotoxicity:This product is not considered toxic to algae, fish, or invertebrates
LC50 (Fish): 5560-12946 mg/L, LC50 (invertebrates): 340.7-1000 mg/L
Biodegredation/Bioaccumulation: Inorganic chemical</td><td>Yes</td></tr>
<tr><td>SODIUM BICARBONATE</td><td>MI-SWACO Schlumberger</td><td>Chemical Additive</td><td>0.195%</td><td>Acute Toxicity:
Sodium Chloride
LD50 Oral (Rat): = 4220 mg/kg
Chronic Toxicity:
Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards
Ecotoxicity:
Toxicity to Fish: LC50: 8250-9000 mg/L (96h), Toxicity to Algae EC50: 650 mg/L (120h) Toxicity to invertebrates: EC50: 2350 (48h)
Biodegredation/Bioaccumulation:
Not applicable; inorganic chemical</td><td>Yes</td></tr>
<tr><td>SODA ASH M3.</td><td>MI-SWACO Sschlumberger</td><td>Chemical Additive</td><td>0.015%</td><td>Acute Toxicity:
Sodium carbonate
LD50 Oral (Rat): > 4090 mg/kg, LC50 Inhalation (Rat): >2300 mg/m3 (1 h)
Chronic Toxicity:
No known sensitizing, carcinogenic, reproductive, or mutagenic effects.
Ecotoxicity:
This product is not considered toxic to algae, fish, daphnia, or invertebrates.
LC50(Lepomis macrochirus): = 300 mg/L (96 h), LC50(Pimephales promelas): 310-1220 mg/L (96 h), EC50(Nitzchia): = 242mg/L (120 h), EC50 (Daphnia magna) = 265 mg/L (48 h)
Biodegredation/Bioaccumulation:
Not applicable- Inorganic chemical.</td><td>Yes</td></tr>
</table>

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
CAUSTIC SODA M2	MI-SWACO Schlumberger	Chemical Additive	0.035%	Acute Toxicity: Sodium Hydroxide Ld50 Dermal (Rabbit): 1350 mg/kg Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to fish, algae, or invertebrates. Toxicity to fish LC60: 45.4 mg/L (96h) Biodegredation/Bioaccumulation: Not applicable; inorganic chemical	Yes
Triethanolamine 85%	MI-SWACO SCHLUMBERGER REDOX	Polymer Extender	1.52%	Acute toxicity: Low Ingestion Acute toxicity (Oral): - LD50, Rat: >4,000 mg/kg [For similar material(s)]. COMPONENT: Triethanolamine: - LD50, Rat: 6,400 mg/kg COMPONENT: Diethanolamine: - LD50, Rat (male/female): 1,600 mg/kg [OECD 401 or equivalent]. Other Acute toxicity (Dermal): - LD50, Rabbit: >2,000 mg/kg [Based on information for component(s)]. COMPONENT: Triethanolamine: - LD50, Rabbit: >2,000 mg/kg (No deaths occurred at this concentration). COMPONENT: Diethanolamine: - LD50, Rabbit (male): 8,200 mg/kg Inhalation Acute toxicity (Inhalation): COMPONENT: Triethanolamine: - Based on the available data, respiratory irritation was not observed. No deaths occurred following exposure to a saturated atmosphere. COMPONENT: Diethanolamine: - LC0, Rat (male): 3.35 mg/l (4 h) Aerosol. Carcinogen Category: None Ecotoxicity Aquatic toxicity: COMPONENT: Triethanolamine (CAS No. 102-71-6): - Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				- May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). - May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms. COMPONENT: Triethanolamine (CAS No. 102-71-6): - Material is readily biodegradable. - 10-day Window: Pass - Biodegradation: 97 % (28 d) [OECD Test Guideline 301A or Equivalent]; 98 % (14 d) [OECD Test Guideline 302B or Equivalent]. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Material is readily biodegradable. - 10-day Window: Pass - Biodegradation: 93 % (28 d) [OECD Test Guideline 301F or Equivalent]. Chronic Toxicity: May cause skin reaction in a small proportion of individuals. No mutagenic effects known. May cause reproductive effects – seen in laboratory animal studies only at doses that produced significant toxicity to the parent animals (Diethanolamine). May cause carcinogenic effects. No carcinogenic category attributed to the product. Persistence/Degradability Mobility COMPONENT: Triethanolamine (CAS No. 102-71-6): - Potential for mobility in soil is very high (Koc between 0 and 50). - Partition coefficient (Koc): 10 [Estimated]. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Potential for mobility in soil is very high (Koc between 0 and 50). - Partition coefficient (Koc): 1 [Estimated]. - Volatilisation from natural bodies of water or moist soil is not expected to be an important fate process. Environmental Fate Harmful to aquatic life - Do not dump into any sewers, on the ground or into any body of water. Bioaccumulation Potential COMPONENT: Triethanolamine (CAS No. 102-71-6): - Bioconcentration potential is low (BCF < 100 or Log Pow < 3). - Partition coefficient: n-octanol/water(log Pow): -2.3 at 25 °C [Measured]. - Bioconcentration factor (BCF): < 3.9 Cyprinus carpio (42 d) [Measured]. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Bioconcentration potential is low (BCF < 100 or Log Pow < 3). - Partition coefficient: n-octanol/water(log Pow): -2.18 at 25 °C [OECD Test Guideline 107 or Equivalent]. Environmental Impact No Data Available	
NUOSEPT 78	TROY	BIOCIDE	0.125%	Acute Mammalian Toxicity Rat (oral LD50): 1400 mg/kg Rat (inhalation LC50): 0.371 mg/L (vapours) Chronic Toxicity Group 1 carcinogen (formaldehyde) No other known chronic impacts Aquatic Toxicity Scophthalmus maximus LC50(96hr): >300 mg/L Acartia tonsa LC50(48hr): 178 mg/L Skeletonema costatum EC50(72hr): 2.9 mg/L Biodegradation 78% (OECD 306)	Yes

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
				Bioaccumulation **Log Pow: 0 (OECD 117)**	
FORM-A-BLOK	**MI-SWACO**	**LCM**	**0.95%**	**Acute Mammalian Toxicity** **Rat (oral) LC50: 5 g/kg** **Rabbit (dermal) LD50: > 2 g/kg** **Rat (inhalation) LC50: > 5800 mg/m3** **Rat (inhalation) LC50 (4 h) > 20 g/kg LD50** **Chronic Toxicity** **AIGIH Carc New: A4** **Aquatic Toxicity** **Scophthalmus maximus LC50(96h): >100 mg/L** **Acartia tonsa LC50(48h): >505 mg/L** **Skeletonema costatum EC50(72h): >1000 mg/L** **Biodegradation** **Biodegradation: not applicable (OECD 306)** **Bioaccumulation** **Log Pow: not applicable (OECD 117)**	**Yes**
Including CIRCAL and OMYACARB Products **CIRCAL 1000-MV** **CIRCAL 60/16-BA** **CIRCAL Y-MV**	**OMYA**	**Bridging Material**	**1.325%**	**Toxicity:** **Component – Calcium carbonate: no significant risk factors have been found for this product. Available data indicates that this product is not harmful.** **Component – Silica: may cause cancer by inhalation – Carcinogenicity category 1A, specific target organ toxicity (repeated exposure) – category 1.** **Ecotoxicity:** **This product is unlikely to adversely effect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities. Expected to not be an environmental hazard.** **Biodegredation/Bioaccumulation: No data available.**	**Yes**
Potassium Chloride M117	**MI-SWACO Schlumberger**	**Shale Inhibition**	**1.30%**	Acute Toxicity: None Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to fish, algae, or invertebrates. Biodegredation/Bioaccumulation: Not applicable; inorganic chemical	**Yes**
M-I-X II (All Grades)	**MI-SWACO Schlumberger**	**LCM**	**3.81%**	**Acute Toxicity:** **Sodium carbonate: LD50 Oral (Rat): > 5 g/kg, LD50 Dermal (Rabbit): >2g/kg, LC50 Inhalation (Rat): >5800 mg/m3, Crystalline quartz, silica: LD50 Oral (Rat): 500 mg/kg** **Chronic Toxicity:** **No known sensitizing, carcinogenic, reproductive, or mutagenic effects. containts a known or suspected carcinogen (crystalline silica dust)** **Ecotoxicity:** **This product is not considered toxic to algae, fish, daphnia, or invertebrates.** **Biodegredation/Bioaccumulation: No product level data available**	**Yes**

Trade name	Supplier	Purpose	Product in system fluid (%)	Toxicity & Ecotoxicity Info	SDS attached
WALNUT NUTPLUG (All grades	MI-SWACO Schlumberger	LCM	4.751%	Acute Toxicity: Cellulose"LD50 Oral (Rat): > 5g/kg, Dd50 Dermal (Rabbit): >2 g/kg, LC50 Inhalation (Rat): > 5800 mg/m3, (4h) Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: Not considered toxic to algae, fish, or invertebrates. Crystalline Silica: Toxicity to Fish: LC50(Danio Rerio): = 10000 mg/L (96 h), Toxicity to Algae: EC50: >1000 mg/L (120 h) , Toxicity to Invertebrates: EC50 (Daphnia magna) >10000 mg/L (48 h) Biodegredation/Bioaccumulation: Not applicable: Inorganic chemical	Yes
KWIK-SEAL (All Grades)	KELCO	LCM	1.29%	Acute Toxicity: None Chronic Toxicity: Not known to be carcinogenic, mutagenic, or sensitizing. No known reproductive or developmental hazards Ecotoxicity: **Wood, wood fibers, ground hulls or shells - CAS NUMBER-N/A** 96-Hour LC50 Crustacea 1000000 ppm Acute **Synthetic flakes - CAS NUMBER-N/A** 96-Hour LC50 Crustacea 1000000 ppm Acute Biodegredation/Bioaccumulation: Expected to biodegrade, not suspected to bioaccumulate.	Yes

C. CHEMICAL LIST

CAS Number	Chemical Name	Mass Fraction	%
-	Water (Including Mix Water Supplied by Client)*	65.3321	%
13462-86-7	Barite	7.3201	%
141-53-7	Sodium formate	6.9767	%
7647-14-5	Sodium chloride	4.6974	%
7447-40-7	Potassium chloride	4.6473	%
1302-78-9	Bentonite	2.5826	%
9046-10-0	Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	1.3498	%
145565-30-6	Starch, 2-hydroxyethyl ether, polymer with 1,3-butadiene and ethenylbenzene, graft	1.2998	%
141-43-5	2-aminoethanol	0.9499	%
863112-38-3	1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propen-1-yl)amino]-, ammonium salt (1:1), polymer with N.N-dimethyl-2-propenamide, sodium salt	0.8997	%
9004-32-4	Sodium carboxymethylcellulose	0.6691	%
68411-90-5	Hexanedinitrile, hydrogenated, high-boiling fraction	0.6666	%
14808-60-7	Crystalline silica (impurity)	0.5212	%
7647-01-0	Hydrochloric acid	0.4747	%
68411-90-5	Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine	0.3149	%
124-09-4	Hexane-1,6-diamine	0.1890	%
1310-73-2	Sodium hydroxide	0.1428	%
1309-48-4	Magnesium oxide	0.1428	%
11138-66-2	Xanthan Gum	0.1242	%
694-83-7	Cyclohex-1,2-ylenediamine	0.1024	%
25987-30-8	2-Propenoic acid, polymer with 2-propenamide, sodium salt	0.0998	%
25322-69-4	Propane-1,2-diol, propoxylated (impurity)	0.0900	%
68515-73-1	D-Glucopyranose, oligomeric, C8-10 glycosides	0.0741	%
497-19-8	Sodium carbonate	0.0719	%
111-76-2	2-butoxyethanol	0.0603	%
68647-72-3	Citrus Extract	0.0524	%
64742-47-8	Distillates, petroleum, hydrotreated light	0.0515	%

75-65-0	2-methylpropan-2-ol (impurity)	0.0474	%
4719-04-4	2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol	0.0406	%
68909-77-3	Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	0.0286	%
10192-30-0	Ammonium hydrogensulfite	0.0260	%
144-55-8	Sodium hydrogen carbonate	0.0208	%
107-22-2	Glyoxal	0.0011	%
52-51-7	2-bromo-2-nitropropane-1,3-diol	0.0008	%
8002-43-5	Lecithins	0.0005	%
79-06-1	2-Propenamid (impurity)	0.0001	%
55965-84-9	5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	0.0001	%
7446-09-5	Sulphur Dioxide (Impurity)	0.0001	%
	Total	**100**	**%**
	Mud	100	%
141-53-7	Sodium formate	6.95	%
7647-14-5	Sodium chloride	6.2	%
13462-86-7	Barite	6.4624	%
7732-18-5	Water (Including Mix Water Supplied by Client)*	6.7	%
471-34-1	Calcium carbonate	1.8637	%
590-29-4	Potassium formate	1.2465	%
14808-60-7	Crystalline silica (impurity)	0.36235	%
9004-34-6	Cellulose	0.32215	%
7782-42-5	Graphite	0.18855	%
8002-13-9	Rapeseed oil	0.1762	%
9004-77-7	Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	0.1602	%
64743-05-1	Coke, Petroleum, Calcined	0.15425	%
107097-75-6	2-Propenoic acid, sodium salt, polymer with 1-ethenyl-2-pyrrolidinone, 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and 2-propenamide	0.1371	%
9005-25-8	Starch	0.1371	%
11138-66-2	Xanthan Gum	0.1359	%
7758-16-9	Disodium dihydrogen diphosphate	0.0962	%

5949-29-1	Citric acid monohydrate	0.0962	%
25265-77-4	3-hydroxy-2,2,4-trimethylpentyl 2-methylpropanoate	0.07205	%
13983-17-0	Wollastonite (Ca(SiO3))	0.0676	%
85049-37-2	Esters of fatty acids, c16-18 and c18-unsaturated	0.0618	%
53845-64-0	1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propen-1-yl)amino]-, sodium salt (1:1), polymer with 1-ethenyl-2-pyrrolidinone	0.0617	%
25987-30-8	2-Propenoic acid, polymer with 2-propenamide, sodium salt	0.06025	%
6381-77-7	2,3-didehydro-3-O-sodio-D-erythro-hexono-1,4-lactone	0.0584	%
None	Nut Shells	0.0569	%
None	Natural Plant fibers	0.0495	%
9063-87-0	Acrylic co-polymer	0.0468	%
4719-04-4	2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol	0.04555	%
61790-12-3	Fatty acids, tall-oil	0.0412	%
68201-32-1	Asphalt, sulfonated, sodium salt	0.03925	%
68909-77-3	Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	0.0321	%
6846-50-0	2,2,4-trimethyl-1,3-pentanediol diisobutyrate	0.0255	%
8001-79-4	Castor oil	0.0183	%
7757-82-6	Sodium sulfate (Impurity)	0.0137	%
144-19-4	2,2,4-Trimethyl-1,3-pentanediol	0.0133	%
9003-11-6	Methyl oxirane polymer with oxirane	0.01195	%
Proprietary	Cotton Seed Hulls	0.0099	%
68131-04-4	Humic acid, sodium salts	0.00935	%
1332-58-7	Kaolin	0.0081	%
Proprietary	Synthetic Flakes	0.0074	%
9002-89-5	Polyvinyl alcohol	0.00675	%
14791-73-2	Aragonite (Ca(CO3))	0.0051	%
7727-73-3	Sodium sulphate	0.0024	%
141-43-5	2-aminoethanol	0.00175	%
14483-19-3	Diopside (impurity)	0.00145	%
1302-62-1	Garnet (impurity)	0.00145	%

1317-65-3	Calcium carbonate (impurity)	0.00145	%
107-22-2	Glyoxal	0.00125	%
32131-17-2	Polyhexamethylene Adipamide	0.00095	%
79-06-1	Prop-2-enamide	<0.0002	%
88-12-0	1-vinylpyrrolidin-2-one	<0.0002	%
5165-97-9	Sodium 2-methyl-2-[(1-oxoallyl)amino]propanesulphonate	<0.0002	%
7446-81-3	Sodium Acrylate (Impurity)	<0.0002	%
546-93-0	Magnesium carbonate	<0.0002	%
1314-11-0	Strontium oxide	<0.0002	%
1333-86-4	Carbon black	<0.0002	%
13463-67-7	Titanium dioxide	<0.0002	%
7446-11-9	Sulfur trioxide	<0.0002	%
None	Pigment	<0.0002	%
1344-28-1	Aluminum oxide	<0.0002	%
None	Fiber Finish	<0.0002	%
10097-28-6	Silicon oxide	<0.0002	
1309-37-1	Iron oxide (Fe2O3)	<0.0002	%
55965-84-9	5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	<0.0002	%
142-82-5	N-heptane	<0.0002	%
7447-40-7	Potassium Chloride Brine	7.5	%
67-48-1	Choline Chloride	0.5	%
75-50-3	N,N-dimethylmethanamine	< 0.001	%
102-71-6	2,2`,2"-nitrilotriethanol	1.5	%
107-21-1	Ethylene Glycol	0.005	%
107-22-2	Glyoxal	0.005	%
111-42-2	DIETHANOLAMINE	0.05	%
141-43-5	2-aminoethanol	0.005	%
144-55-8	Sodium hydrogen carbonate	0.5	%
471-34-1	Calcium carbonate	6.5	%
497-19-8	Sodium carbonate	0.05	%
1302-62-1	GARNET	0.05	%

1302-78-9	Bentonite	1.5	%
1305-62-0	Calcium hydroxide	1	%
1309-64-4	Antimony trioxide	0.5	%
1310-73-2	Sodium hydroxide	0.5	%
1317-65-3	Limestone	3.5	%
1332-58-7	Kaolin	1	%
4719-04-4	Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	0.5	%
7647-14-5	Sodium chloride	6	%
7727-73-3	SODIUM SULPHATE	0.5	%
8001-79-4	Castor oil	0.5	%
8002-13-9	Rapeseed oil	0.5	%
9002-89-5	Polyvinyl alcohol	1	%
9003-07-0	Polypropylene	0.5	%
9003-11-6	POLYETHYLENE-POLYPROPYLENE GLYCOL	0.05	%
9004-32-4	Sodium carboxymethylcellulose	0.5	%
9004-34-6	Cellulose	14	%
9004-77-7	Poly(oxy-1,2-ethanediyl), a-butyl-w-hydroxy-	0.5	%
9005-81-6	Cellophane	0.5	%
11138-66-2	Xanthan gum	0.5	%
12765-06-9	DIOPSIDE	0.05	%
13462-86-7	Barite (Ba(SO4))	5.5	%
13983-17-0	Wollastonite (Ca(SiO3))	8.5	%
14808-60-7	Crystalline silica (impurity)	0.5	%
25322-69-4	Propane-1,2-diol, propoxylated	0.5	%
25987-30-8	Anionic acrylamide copolymer	0.5	%
61790-12-3	Fatty acids, tall-oil	0.5	%
68131-04-4	Humic acid, sodium salts	0.5	%
68201-32-1	Asphalt, sulfonated, sodium salt	0.5	%
135800-37-2	Fatty acids, C8 - 16, 2-ethylhexyl esters	0.5	%

SDS no. PID20524
Version 1
Revision date 15-Oct-2020
Supersedes Date: None

Safety Data Sheet
ASPHASOL* SUPREME (GBL041)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name ASPHASOL* SUPREME (GBL041)
Product code PID20524
Country Limitations This SDS is not for use in the European Union (EU).

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale inhibitor. / Fluid loss reducer.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains
Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Crystalline silica (impurity)	238-878-4	14808-60-7	<3

3.2 Mixtures

Not applicable

Comments
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Material becomes slippery when wet. Use caution if wet. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Protect from moisture Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Neoprene Nitrile Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odor	Mild Sulfur
Color	Gray - Black

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	7 - 10	@ 2%
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	Not applicable	
Flammability	Not applicable	
Explosion limits:		

Upper explosion limit	No information available
Lower explosion limit	No information available
Vapor pressure	No information available
Relative Vapor Density	No information available
Specific gravity	1.40 - 1.65
Bulk density	No information available
Water solubility	Partly soluble
Solubility in other solvents	No information available
Autoignition temperature	190 °C / 374 °F
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

This product contains an ingredient that is classified, according to European regulations, as "harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment".
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

Product is not biodegradable. See component information below.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Partly soluble. See component information below.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required

Group number Not required

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

This SDS is not for use in the European Union (EU).

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Revision date	15-Oct-2020
Version	1
This SDS has been revised in the following section(s)	New issue.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*
Flammability	1
Physical hazard	0
PPE	E

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Safety Data Sheet

BARITE (All Grades)

Revision date 21-Jun-2024 **Supersedes Date:** 17-Jan-2020 **Version** 14

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name BARITE (All Grades)
Product code PID2049

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Weighting agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Barite

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Barite	236-664-5	13462-86-7	60 - 100
Crystalline silica (impurity)	238-878-4	14808-60-7	5 - <10

3.2 Mixtures

Not applicable

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Barite	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Barite	Not determined	Not determined	Not determined
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Barite	6 mg/m³ MAC	Not determined	Not determined
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Barite	Not determined	Not determined	6 mg/m³ TWA

			Fibrogenic substance 0248
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154

Chemical Name	Thailand	Vietnam	Turkey
Barite	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene PVC Nitrile Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Color	Tan - Gray
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	1580 °C / 2876 °F	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	4.10 - 4.25	@ 20 °C
Bulk density	1920 - 2400 kg/m³	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Avoid wet and humid conditions.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Respirable quartz <0.3%. Report number: N600517.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Barite	> 15000 mg/kg (Rat)	No data available	No data available
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Barite	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h LC50 Daphnia manga (pulga Aquatica): > 10000 mg/l 24h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Barite	Inorganic compound
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Barite	Product/Substance is inorganic
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Barite	Insoluble in water
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Barite	Not expected to adsorb on soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

CAS Number 7727-43-7 can be used to identify the substance mentioned in Section 3 for the International Inventories.

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	17-Jan-2020
Revision date	21-Jun-2024
Version	14

This SDS has been revised in the following section(s) All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*
Flammability	0
Physical hazard	0
PPE	E

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SDS no. D020
Version 7
Revision date 28-Feb-2022
Supersedes Date: 11-Oct-2018

Safety Data Sheet
Bentonite Extender D20

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Bentonite Extender D20
Product code D020

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Used as a cementing additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

Contains
Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Crystalline silica (impurity)	238-878-4	14808-60-7	1-5

3.2 Mixtures

Not applicable

Comments
Naturally occuring mineral.
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Use protective gloves made of: Neoprene Nitrile Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odor	Odorless
Color	Cream - Gray

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	9-10	
Melting / freezing point	> 450 °C / 842 °F	
Boiling point/range	No information available	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	Not applicable	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.3 - 2.6	20 °C

Bulk density	750 – 950 kg/m³
Water solubility	Insoluble in water
Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	> 500 °C / 932°F
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid wet and humid conditions. Avoid dust formation.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information	This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.
Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated

ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required

Group number Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian	Complies

Inventory

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	11-Oct-2018
Revision date	28-Feb-2022
Version	7
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*
Flammability	0
Physical hazard	0
PPE	E

Disclaimer
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Safety Data Sheet

BENTONITE

Revision date 26-Jul-2024 **Supersedes Date:** 09-Feb-2019 **Version** 11

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name BENTONITE
Product code PID211

Synonyms API BENTONITE (API Bentonita),
OCMA BENTONITE (OCMA Bentonita),
WYOMING BENTONITE (WYOMING Bentonita)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Viscosifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains
Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Product dust may be irritating to eyes, skin and respiratory system

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Crystalline silica (impurity)	238-878-4	14808-60-7	1-5

3.2 Mixtures

Not applicable

Comments
Naturally occuring mineral.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**

Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders
Use protective gloves made of: Neoprene Nitrile
Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state Solid

Appearance	Powder
Color	Cream - Gray
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	9-10	
Melting / freezing point	> 450 °C / 842 °F	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	Not Applicable	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.3 - 2.6	20 °C
Bulk density	750 – 950 kg/m³	
Water solubility	Negligible	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 500 °C / 932°F	
Kinematic viscosity	. Not applied	
Dynamic viscosity	. Not applied	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid wet and humid conditions. Avoid dust formation.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h LC50 Daphnia manga (pulga Aquatica): > 10000 mg/l 24h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	09-Feb-2019
Revision date	26-Jul-2024
Version	11
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*
Flammability	0

Physical hazard	0
PPE	X

Disclaimer

The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

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Safety Data Sheet

CAUSTIC SODA M2

Revision date 11-Dec-2023 **Supersedes Date:** 08-Oct-2018 **Version** 6

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name CAUSTIC SODA M2
Product code M002

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Additive in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin corrosion/irritation	Category 1 Subcategory 1A
Serious eye damage/eye irritation	Category 1

Environmental hazards Not classified

Physical Hazards

Substances/mixtures corrosive to metal	Category 1

2.2 Label elements



Signal word
DANGER

Hazard Statements
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

Precautionary statements
P260 - Do not breathe dust
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P234 - Keep only in original container
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P406 - Store in corrosion resistant container with a resistant inner liner

Contains
Sodium hydroxide

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Contact with metals may evolve flammable hydrogen gas
The product reacts with water and will generate heat.

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Sodium hydroxide	215-185-5	1310-73-2	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

Ingestion Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

Skin contact Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

Eye Contact Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Contact with metals may evolve flammable hydrogen gas. The product reacts with water and will generate heat. React vigorously and/or explosively with water.

Hazardous combustion products
Thermal decomposition can lead to release of toxic and corrosive gases/vapors Sodium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Flush area with flooding quantities of water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid dust formation. Do not breathe dust. Never add water directly to this product - may cause vigorous reaction/boiling. Always dilute by carefully pouring the product into the water. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Reacts violently with water Store in original container. Avoid contact with: Metals Acids

Storage class Corrosive storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Sodium hydroxide	Not determined	2 mg/m³ Peak	2 mg/m³ Ceiling
Chemical Name	**India**	**Indonesian**	**Japan**
Sodium hydroxide	2 mg/m³ Ceiling	2 mg/m³ STEL	2 mg/m³ Ceiling
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sodium hydroxide	Not determined	2 mg/m³ TWA	2 mg/m³ Ceiling
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sodium hydroxide	2 mg/m³ Ceiling	2 mg/m³ TWA	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sodium hydroxide	2 mg/m³ TWA	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts
Wear chemical splash goggles and face shield

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders
Impervious gloves made of: Nitrile Rubber PVC
Break through time >480 minutes
Glove thickness 0.5 mm
Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Flakes
Color	White
Odor	Odorless

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	>14	10 g/ 100ml
Melting / freezing point	323 °C / 613.4 °F	
Boiling point/range	1388 °C / 2530.4 °F	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	0.1 kPa	@ 739 °C
Relative Vapor Density	>1 (air = 1)	
Specific gravity	No information available	@ 20 °C
Bulk density	1.1 - 2.13 g/cm³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	. 2.1 @ 20 °C	
Explosive properties	Not applicable	
Oxidizing properties	Not applicable	

9.2 Other information

Pour point	No information available
Molecular weight	No information available

VOC content(%) None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Corrosive. Corrosive to Metals. Contact with metals may evolve flammable hydrogen gas. Reacts violently with water.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Do not add water directly to the product. It may cause a violent reaction. Avoid dust formation.

10.5 Incompatible materials

Acids. Metals. Water.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns. Inhaled corrosive substances can lead to a toxic edema of the lungs.

Eye contact Causes serious eye damage.

Skin contact Causes severe skin burns.

Ingestion Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	= 325 mg/kg (Rat)	1350 mg/kg (Rabbit)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Skin contact. Eye contact. Inhalation. Ingestion.
Routes of entry	Inhalation. Skin contact. Eye contact.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Large amounts will affect pH and harm aquatic organisms

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium hydroxide	= 45.4 mg/L LC50 Oncorhynchus mykiss 96 h	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Sodium hydroxide	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Sodium hydroxide	Product/Substance is inorganic

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Sodium hydroxide	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Sodium hydroxide	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG) UN1823
UN No. (IMDG/ANTAQ) UN1823
UN No. (ICAO/ANAC) UN1823

14.2. UN proper shipping name
SODIUM HYDROXIDE, SOLID,

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class 8
IMDG/ANTAQ Hazard class 8
ICAO/ANAC Hazard class/division 8

14.4 Packing group
ADR/RID/ADN/ADG Packing group II
IMDG/ANTAQ Packing group II
ICAO/ANAC Packing group II



14.5 Environmental hazard
No

14.6 Special precautions

Hazard identification no (ADR)	80
EmS (IMDG)	F-A, S-B
Emergency Action Code (EAC)	2W
Tunnel restriction code	(E)

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Sodium hydroxide
Schedule 6
Schedule 5

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies

Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	08-Oct-2018
Revision date	11-Dec-2023
Version	6
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	0
Physical hazard	1
PPE	X

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Safety Data Sheet

CITRIC ACID

Revision date 01-Nov-2023 **Supersedes Date:** 19-Dec-2022 **Version** 11

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name CITRIC ACID
Product code PID360

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use pH modifier

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P337 + P313 - If eye irritation persists: Get medical advice/attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Contains
Citric acid monohydrate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Citric acid monohydrate	611-842-9	5949-29-1	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention immediately if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents

Strong alkalies.

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Citric acid monohydrate	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Citric acid monohydrate	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Citric acid monohydrate	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Citric acid monohydrate	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Citric acid monohydrate	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders
Repeated or prolonged contact Use protective gloves made of: Nitrile rubber
Break through time >480 minutes
Glove thickness 0.11 mm
Frequent change is advisable

Respiratory protection No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline Dust
Color	White
Odor	Odorless

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	< 3.5	@ 10% solution
Melting / freezing point	153 °C / 307.4 °F	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	900 kg/m³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	1010 °C / 1850 °F	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	1.542 g/cm³	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture. Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Strong oxidizing agents. Strong alkalies.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause respiratory irritation. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Eye contact Causes serious eye irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort. May cause additional affects as listed under "Inhalation".

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Citric acid monohydrate	= 3 g/kg (Rat)	> 2000 mg/kg (Rat)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Eye contact. Inhalation.
Routes of entry	Inhalation. Eye contact.
Specific target organ toxicity - Single exposure	Category 3
Specific target organ toxicity - Repeated exposure	Not classified.
Target organ effects	Respiratory system.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Citric acid monohydrate	= 1516 mg/L LC50 Lepomis macrochirus 96 h	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Citric acid monohydrate	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Citric acid monohydrate	No bioaccumulation potential

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Citric acid monohydrate	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Citric acid monohydrate	No information available

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	19-Dec-2022
Revision date	01-Nov-2023
Version	11
This SDS has been revised in the	All sections No changes with regard to classification have been made.

following section(s)

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	B

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SDS no. PID17252
Version 6
Revision date 21-Feb-2023
Supersedes Date: 01-Dec-2018

Safety Data Sheet
DEEPCLEAN* NS

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name DEEPCLEAN* NS
Product code PID17252

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Completion fluid additive.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Aspiration toxicity	Category 1
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary statements
P280 - Wear protective gloves and eye/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P331 - Do NOT induce vomiting
P310 - Immediately call a POISON CENTER or doctor/physician

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
2-butoxyethanol

Distillates, petroleum, hydrotreated light

D-Glucopyranose, oligomeric, C8-10 glycosides

Orange, sweet, extract

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
2-butoxyethanol	203-905-0	111-76-2	10-30
Distillates, petroleum, hydrotreated light	265-149-8	64742-47-8	10-30
D-Glucopyranose, oligomeric, C8-10 glycosides	500-220-1	68515-73-1	10-30
Orange, sweet, extract	232-433-8	8028-48-6	10-<25

Comments
Based on test data - H317, H302, H411 does not apply.
Citrus extract can use either CAS# 8028-48-6 or 68647-72-3.

4. First Aid Measures

4.1 First aid measures

Inhalation Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. Seek medical attention at once.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person. Seek medical attention.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products

Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong alkalies. Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m³ and ST. EXP = 10mg/m³.

Component Information

Chemical Name	Arabic	Australia	Egypt
2-butoxyethanol	25 ppm TWA 121 mg/m³ TWA	50ppmSTEL 242mg/m³STEL 20ppmTWA 96.9mg/m³TWA	Not determined
Distillates, petroleum, hydrotreated light	Not determined	Not determined	Not determined
D-Glucopyranose, oligomeric, C8-10 glycosides	Not determined	Not determined	Not determined
Orange, sweet, extract	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
2-butoxyethanol	Not determined	20 ppm TWA	20 ppm Ceiling 97 mg/m³ Ceiling May cause substantial skin absorption 25 ppm ACL
Distillates, petroleum, hydrotreated light	Not determined	Not determined	Not determined
D-Glucopyranose, oligomeric, C8-10 glycosides	Not determined	Not determined	Not determined
Orange, sweet, extract	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
2-butoxyethanol	5 mg/m³ MAC	Not determined	25 ppm TWA 121 mg/m³ TWA Possibility of significant uptake through the skin*1)
Distillates, petroleum, hydrotreated light	Not determined	Not determined	Not determined
D-Glucopyranose, oligomeric, C8-10 glycosides	Not determined	Not determined	Not determined
Orange, sweet, extract	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
2-butoxyethanol	20 ppm TWA 96.7 mg/m³ TWA Skin notation*3)	skin - potential for cutaneous absorption 50 ppm TWA 240 mg/m³ TWA	5 mg/m³ MAC
Distillates, petroleum, hydrotreated light	Not determined	Not determined	100 mg/m³ TWA 300 mg/m³ MAC
D-Glucopyranose, oligomeric, C8-10 glycosides	Not determined	Not determined	Not determined
Orange, sweet, extract	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
2-butoxyethanol	50 ppm TWA	Not determined	50 ppm STEL 246 mg/m³ STEL Skin*2) 20 ppm TWA 98 mg/m³ TWA
Distillates, petroleum, hydrotreated	Not determined	Not determined	Not determined

light			
D-Glucopyranose, oligomeric, C8-10 glycosides	Not determined	Not determined	Not determined
Orange, sweet, extract	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Solvent
Color	Yellow

Property	Values	Remarks
pH	4.5 - 6.0	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	> 105 °C / > 221 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	10 cSt	@ 40 °C
Partition Coefficient (n-octanol/water)	Not determined	
Density and/or Relative Density	0.915 - 0.935	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid contact with heat, sparks, open flame, and static discharge.

10.5 Incompatible materials

Strong alkalies. Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Vapors may irritate throat and respiratory system. May cause additional affects as listed under "Ingestion".

Eye contact Causes serious eye damage.

Skin contact Causes skin irritation. Repeated exposure may cause skin dryness or cracking. Components of the product may be absorbed into the body through the skin.

Ingestion May be fatal if swallowed and enters airways. Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-butoxyethanol	1200 mg/kg (Guinea pigs)	> 2000 mg/kg (Rat)	400 ppm (Rabbit)
Distillates, petroleum, hydrotreated light	> 5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
D-Glucopyranose, oligomeric, C8-10 glycosides	> 2000 mg/kg bw (Rat) ECHA Data	> 2000 mg/kg (Rabbit) ECHA Data	No data available
Orange, sweet, extract	No data available	> 5000 mg/kg (Rabbit)	No data available

Sensitization Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Eye contact. Skin contact.

Routes of entry Inhalation. Eye contact. Skin absorption.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

This product contains an ingredient that is classified, according to European regulations, as "harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment". However, at the concentration present, this preparation is not expected to present significant adverse environmental effects.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2-butoxyethanol	= 1490 mg/L LC50 Lepomis macrochirus 96 h = 2950 mg/L LC50 Lepomis macrochirus 96 h	No information available	= 1698 - 1940 mg/L LC50 Daphnia magna = 1720 mg/L EC50 water flea
Distillates, petroleum, hydrotreated light	= 45 mg/L LC50 Pimephales promelas 96 h = 2.4 mg/L LC50 Oncorhynchus mykiss 96 h = 2.2 mg/L LC50 Lepomis macrochirus 96 h	No information available	No information available
D-Glucopyranose, oligomeric, C8-10 glycosides	170 mg/l LC50 Zebra fish	37 mg/L (= 21 mg a.i./L) EC50 to the freshwater algae Scenedesmus subspicatus 72h	> 100 mg/l EC50 Daphnia magna 48h
Orange, sweet, extract	> 1000 mg/l (Scophthalmus Maximus), 96h	No information available	451 mg/l (Acartia Tonsa), 48h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
2-butoxyethanol	Readily biodegradable
D-Glucopyranose, oligomeric, C8-10 glycosides	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
2-butoxyethanol	Not likely to bioaccumulate
D-Glucopyranose, oligomeric, C8-10 glycosides	Not likely to bioaccumulate

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
2-butoxyethanol	Soluble in water
D-Glucopyranose, oligomeric, C8-10 glycosides	Partially soluble

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
2-butoxyethanol	No information available
D-Glucopyranose, oligomeric, C8-10 glycosides	No information available

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-butoxyethanol
Schedule 6

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	6.1E, 6.3A, 8.3A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	01-Dec-2018
Revision date	21-Feb-2023
Version	6
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	1
Physical hazard	0
PPE	X

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Safety Data Sheet

DEFOAM*-A

Revision date 11-Feb-2025 **Supersedes Date:** 30-Jan-2020 **Version** 9

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name DEFOAM*-A
Product code PID150
Country Limitations This SDS is not for use in the European Union (EU).

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Defoamer

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA +1 866 928 0789

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H319 - Causes serious eye irritation
H361 - Suspected of damaging fertility or the unborn child

Precautionary statements
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P337 + P313 - If eye irritation persists: Get medical advice/attention

Contains
2,2,4-trimethyl-1,3-pentanediol diisobutyrate

2,2,4-Trimethyl-1,3-pentanediol

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	229-934-9	6846-50-0	10-30
2,2,4-Trimethyl-1,3-pentanediol	205-619-1	144-19-4	10-30

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Seek medical attention if irritation occurs.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Contains no substances with occupational exposure limit values No biological limit allocated

Component Information

Chemical Name	Arabic	Australia	Egypt
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	Not determined	Not determined	Not determined
2,2,4-Trimethyl-1,3-pentanediol	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	Not determined	Not determined	Not determined
2,2,4-Trimethyl-1,3-pentanediol	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	Not determined	Not determined	Not determined
2,2,4-Trimethyl-1,3-pentanediol	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	Not determined	Not determined	Not determined
2,2,4-Trimethyl-1,3-pentanediol	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	Not determined	Not determined	Not determined
2,2,4-Trimethyl-1,3-pentanediol	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene Wear chemical resistant gloves such as nitrile or neoprene.
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing

before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Mild

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	-50 °C / -58 °F	
Boiling point/range	255 °C / 491 °F	
Flash point	111 °C / 232 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	0.9 - 1.0	
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	Not determined	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Causes serious eye irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	> 3200 mg/kg (Rat)	> 2000 mg/kg (rabbit) - Literature data	> 5.3 mg/L (Rat) 6 h
2,2,4-Trimethyl-1,3-pentanediol	= 2 g/kg (Rat)	No data available	> 4.5 mg/L (Rat) 6 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Routes of Exposure Eye contact.

Routes of entry Eye contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	> 1.55 mg/L LC50 Pimephales promelas 96 h	> 7.49 mg/l EC50 - 72 h - Literature data	> 1.46 mg/L EC50 Daphnia magna 48 h
2,2,4-Trimethyl-1,3-pentanediol	> 700 mg/L LC50 Lepomis macrochirus 96 h	> 100 mg/l EC50 - 72 h - Literature data	> 100 mg/l EC50 - 48 h - Literature data

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Insoluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	6.4A, 6.8B

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	30-Jan-2020
Revision date	11-Feb-2025
Version	9
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Do not handle until all safety precautions have been read and understood
Follow general hygiene considerations recognized as common good workplace practices

HMIS classification

Health	2*
Flammability	1
Physical hazard	0
PPE	X

*A mark of M-I L.L.C., a Schlumberger Company

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Driscal® D Polymer

Version 2.4 Revision Date 2025-05-14

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name	:	Driscal® D Polymer
Material	:	1112534, 1016818
Use	:	Drilling Fluid Additive
Company	:	Chevron Phillips Chemical Company LP Drilling Specialties Company LLC 9500 Lakeside Blvd. The Woodlands, TX 77381

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726;POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;

Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052
Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification
: Combustible dust

Labeling

Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.

Potential Health Effects

Physical Hazards : Mechanical processing may form combustible dust concentrations in air and thermal processing at elevated temperatures may generate simple hydrocarbons and carbon oxides.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : High Temperature Polymer

Component	CAS-No.	Weight %
Sodium salt of sulfonated acrylamide and vinyl lactam	Proprietary	100

SECTION 4: First aid measures

General advice	:	No hazards which require special first aid measures.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

SECTION 6: Accidental release measures

Personal precautions	:	Avoid dust formation.
Environmental precautions	:	No special environmental precautions required.
Methods for cleaning up	:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Additional advice	:	Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Advice on protection against fire and explosion	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers	:	Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	No materials to be especially mentioned.
Use	:	Drilling Fluid Additive

SECTION 8: Exposure controls/personal protection

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Safety glasses.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Powder
Physical state	:	solid
Color	:	White
Odor	:	no odor
Odor Threshold	:	No data available

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	No
Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Molecular weight	:	Not applicable
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	No data available
Vapor pressure	:	No data available
Relative density	:	1.44

Density	:	No data available
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Pow: < 3
Solubility in other solvents	:	8.940 g/l at 20°C (68°F) Medium: Water Method: OECD Test Guideline 120
Viscosity, kinematic	:	No data available
Relative vapor density	:	No data available
Evaporation rate	:	No data available

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Conditions to avoid : No data available.

Materials to avoid : No data available.

Thermal decomposition : No data available

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Driscal® D Polymer
Skin irritation : No skin irritation.

Driscal® D Polymer
Eye irritation : No eye irritation.

Driscal® D Polymer
Further information : The product contains no substances classified as hazardous to health in concentrations which should be taken into

account.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish	:	LC50: > 1,800 mg/l Exposure time: 96 h Species: Scophthalmus maximus (Flatfish, Flounder) static test Method: PARCOM Protocol Part B
Toxicity to daphnia and other aquatic invertebrates	:	LC50: 599 mg/l Exposure time: 48 h Species: Acartia tonsa (Marine Copepod) static test Method: ISO TC147/SC5/WG2
Toxicity to algae	:	EC50: 2,693 mg/l Exposure time: 72 h Species: Skeletonema costatum (marine diatom) static test Method: ISO 10253
Biodegradability	:	This material is not expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation	:	Accumulation in aquatic organisms is unlikely. The polymer is too large to be bioavailable.
Mobility	:	No data available
Additional ecological information	:	This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.
Long-term (chronic) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging	:	Empty containers should be taken to an approved waste

handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Combustible dust

CERCLA Reportable Quantity	:	This material does not contain any components with a CERCLA RQ.
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.
SARA 313 Components	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

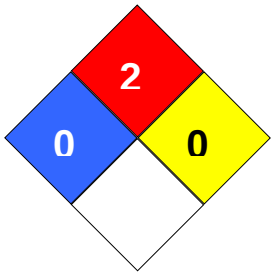
Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	All substances listed as active on the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory

Korea KECI	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	This product contains one or more substances that have been notified under New Substances Notification laws.

SECTION 16: Other information

NFPA Classification : Health Hazard: 0
Fire Hazard: 2
Reactivity Hazard: 0



Further information

Legacy SDS Number : 244990

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit

IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

Dristemp® Polymer

Version 2.3 Revision Date 2025-05-14

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name	:	Dristemp® Polymer
Material	:	1097220
Use	:	Drilling Fluid Additive
Company	:	Chevron Phillips Chemical Company LP Drilling Specialties Company LLC 9500 Lakeside Blvd. The Woodlands, TX 77381

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726;POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;

Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052
Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification
: Combustible dust

Labeling

Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : None established

Molecular formula : Proprietary

Component	CAS-No.	Weight %
Sodium salt of sulfonated acrylamide, acrylic amide, sodium acrylate and vinyl	Proprietary	100

lactam		

SECTION 4: First aid measures

General advice	:	No hazards which require special first aid measures.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Suitable extinguishing media	:	Avoid the use of straight streams that may create a dust cloud and the risk of a dust explosion.
Specific hazards during fire fighting	:	Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.
Hazardous decomposition products	:	Carbon oxides. Sulfur oxides.

SECTION 6: Accidental release measures

Personal precautions	:	Avoid dust formation.
Environmental precautions	:	No special environmental precautions required.
Methods for cleaning up	:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Additional advice	:	Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Advice on protection against fire and explosion	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers	:	Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	No materials to be especially mentioned.
Use	:	Drilling Fluid Additive

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

US

Components	Basis	Value	Control parameters	Note
Urea	US WEEL	TWA	10 mg/m3	

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. Air-Purifying Respirator for Organic Vapors, Dusts and Mists. A positive pressure, air-supplying respirator may be appropriate if there is

potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Safety glasses.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Powder
Physical state	:	solid
Color	:	White
Odor	:	no odor
Odor Threshold	:	No data available

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	No
Autoignition temperature	:	No data available
Molecular formula	:	Proprietary
Molecular weight	:	No data available
pH	:	No data available
Freezing point	:	Not applicable
Pour point		Not applicable

Boiling point/boiling range	:	Not applicable
Vapor pressure	:	Not applicable
Relative density	:	1.44
Water solubility	:	Completely Soluble
Partition coefficient: n-octanol/water	:	No data available
Solubility in other solvents	:	9.150 g/l at 20°C (68°F) Medium: Water Method: OECD Test Guideline 120
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Relative vapor density	:	Not applicable
Evaporation rate	:	No data available

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Conditions to avoid : Generation of Dusts.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous decomposition products : Carbon oxides
Sulfur oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Dristemp® Polymer

Acute oral toxicity : Presumed Not Toxic

Dristemp® Polymer
Acute inhalation toxicity : Presumed Not Toxic

Dristemp® Polymer
Acute dermal toxicity : Presumed Not Toxic

Dristemp® Polymer
Further information : Product dust may be irritating to eyes, skin and respiratory system.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish : This material is not expected to be harmful to aquatic organisms.
Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : This material is not expected to be harmful to aquatic organisms.
Information given is based on data obtained from similar substances.

Toxicity to algae : This material is not expected to be harmful to aquatic organisms.
Information given is based on data obtained from similar substances.

Biodegradability : This material is not expected to be readily biodegradable.
Information given is based on data obtained from similar substances.

Elimination information (persistence and degradability)

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility : No data available

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards	:	Combustible dust
CERCLA Reportable Quantity	:	Calculated RQ exceeds reasonably attainable upper limit. Acrylamide
SARA 302 Reportable Quantity	:	Calculated RQ exceeds reasonably attainable upper limit. Acrylamide
SARA 302 Threshold Planning Quantity	:	This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	:	Calculated RQ exceeds reasonably attainable upper limit. Acrylamide 79-06-1 5000 lbs
SARA 313 Components	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : HE POLYMER F - 107097-75-6
Acrylamide - 79-06-1

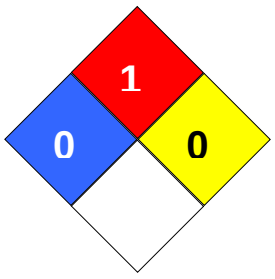
California Prop. 65 Components : WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
Acrylamide 79-06-1

Notification status

Europe REACH	:	This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).
Switzerland CH INV	:	Not in compliance with the inventory
United States of America (USA) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
China IECSC	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 0
Fire Hazard: 1
Reactivity Hazard: 0



Further information

Legacy SDS Number : CPC00417

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

SDS no. PID552
Version 9
Revision date 05-Oct-2022
Supersedes Date: 08-Mar-2019

Safety Data Sheet
DUAL-FLO* HT

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name DUAL-FLO* HT
Product code PID552

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Filtration-control.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Starch

2.3 Other hazards

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Starch	232-679-6	9005-25-8	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Starch	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Starch	Not determined	10 mg/m³ TWA	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Starch	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Starch	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Starch	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odor	Mild
Color	White

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	5.0 - 8.0	@4%
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.5	@ 20 °C
Bulk density	30 - 45 lb/ft³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	

Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Starch	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Starch	No information available	No information available	No information available

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08-Mar-2019
Revision date	05-Oct-2022
Version	9
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Do not handle until all safety precautions have been read and understood Follow general hygiene considerations recognized as common good workplace practices

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

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SDS no. PID510
Version 13
Revision date 03-Mar-2022
Supersedes Date: 16-Nov-2018

Safety Data Sheet
DUO-VIS*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name DUO-VIS*
Product code PID510

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Viscosifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Glyoxal

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Glyoxal	203-474-9	107-22-2	<1

Comments
The product contains other ingredients which do not contribute to the overall classification.
Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

Environmental exposure controls
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. Use non-sparking tools and equipment. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Glyoxal	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Butyl Neoprene Nitrile Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odor	Mild
Color	Cream - Tan

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	7	@ 1% sol.
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	

Relative Vapor Density	No information available	
Specific gravity	1.5	20 °C
Bulk density	50 lb/ft³ (800 kg/m³)	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	> 200 °C / > 392 °F	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties Suspended dust may present a dust explosion hazard
Oxidizing properties None known.

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glyoxal	= 200 mg/kg (Rat)	= 12700 mg/kg (Rabbit)	= 2.44 mg/L (Rat) 4 h

Sensitization EUH208 - Contains (Glyoxal). May produce an allergic reaction.

Mutagenic effects Contains an known or suspected mutagen.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact.

Routes of entry Inhalation. Skin contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Glyoxal	> 1000 mg/l LC50 Scophthalmus	207 mg/l EC50 Skeletonema 72h	259 mg/L LC50 Acartia 48h

	Maximus 96h SLB data	SLB data	SLB Data

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Glyoxal	Not readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Glyoxal	Does not bioaccumulate

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Glyoxal	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Glyoxal	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies

Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	16-Nov-2018
Revision date	03-Mar-2022
Version	13
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	E

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Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.
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SDS no. 144221
Version 2
Revision date 25/Mar/2022
Supersedes date 04/Aug/2021

Safety Data Sheet
EMI-1797

1. Identification

1.1 Product identifier

Product name EMI-1797

Product code 144221

Country Limitations This SDS is not for use in the European Union (EU).

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale inhibitor.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I L.L.C.
P.O.Box 42842
Houston, TX 77242
www.miswaco.slb.com
Telephone: 1 281-561-1511

Schlumberger Canada, Ltd.
200, 125 - 9th Avenue SE
Calgary, Alberta T2G 0P6, Canada

E-mail address SDS@slb.com

Prepared by
Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong

1.4 Emergency Telephone Number

Emergency telephone (24 Hour) Asia Pacific +65 3158 1074, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, USA +1 281 561 1600, Canada +1 800 579 7421, Argentina: +54 11 5984 3690, Brazil : +55 11 3197 5891

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS - Classification

Health hazards

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

Skin sensitization	Category 1
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Precautionary Statements
P260 - Do not breathe dust, fume, gas, mist, vapors, spray
P280 - Wear protective gloves and eye/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or physician

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazards not otherwise classified
None known

Unknown acute toxicity Not applicable.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	Weight-%
Complex compounds amines based	Proprietary	30 - 60
Hydrochloric acid	7647-01-0	15 - 40

Comments
The exact percentage (concentration) of composition has been withheld as a trade secret.
Hydrochloric acid added for pH adjustment.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention at once.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice.

Eye Contact — Immediately flush eyes with water for 15 minutes while holding eyelids open. Remove contact lenses, if worn. Seek medical attention at once.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

5.3 Advice for firefighters

Special protective equipment and precautions for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapors or spray mist. Use personal protective equipment. Do not get on skin or clothing. Wash thoroughly after handling. See also section 8.

Advice for non-emergency responders
Evacuate non-essential personnel.

Advice for emergency responders
Evacuate personnel to safe areas. Use non-slip safety shoes in areas where spills or leaks can occur. Wear respiratory protection. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Do not allow material to contaminate ground water system.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with:. Strong oxidizing agents.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	ACGIH TLV	OSHA PEL	Argentina - Occupational Exposure Limits - TWAs (CMPs)	Brazil - Occupational Exposure Limits - TWAs (LTs)	Mexico - Occupational Exposure Limits - TWAs (LMPE-PPTs)
Complex compounds amines based	Not determined	Not determined	Not determined	Not determined	Not determined
Hydrochloric acid	2 ppm C	5 ppm C 7 mg/m^3 C	Not determined	Not determined	Not determined

IDLH (Immediately Dangerous to Life or Health)
Immediately Dangerous to Life or Health (IDLH) is established by the US National Institute for Occupational Safety and Health (NIOSH). The purpose of establishing an IDLH value is to ensure that the worker can escape from a given contaminated environment in the event of failure of the most protective respiratory protection equipment. In the event of failure of respiratory protection equipment every effort should be made to exit immediately.

Chemical Name	IDLH (Immediately Dangerous to Life or Health)
Complex compounds amines based	Not applicable
Hydrochloric acid 7647-01-0	50 ppm IDLH

8.2 Exposure controls

A risk assessment is recommended to be performed by a qualified and trained personnel to analyze the worksite and recommends the appropriate controls such as engineering controls, work practice controls, and administrative controls as primary means of reducing employee exposure. When there is a remaining hazards after applying the primary controls, Personal Protective Equipment (PPE) must be used.

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may

be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Tightly fitting safety goggles. Safety glasses with side-shields.
Hand protection	Use protective gloves made of: Neoprene Rubber PVC Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory Protection	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.If exposed to airborne mist/aerosol of this product, use an organic vapor cartridge with a P-95 pre-filter attached. In work environments containing oil mist/aerosol, use an organic vapor cartridge with a P-95 pre-filter attached.If exposed to vapors from this product, use a NIOSH/MSHA-approved respirator with an organic vapor cartridge.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	No information available
Odor	Pungent
Odor threshold	Not applicable

Property	**Values**	**Remarks**
pH	9 - 10	
pH @ dilution	No information available	
Melting point	No information available	
Boiling point/range	~ 100 °C / 212 °F	
Flash point	> 100 °C / > 212 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.0 - 1.10	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	Not determined	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density and/or Relative Density	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Product information	Skin corrision: Not corrosive. - By analogy to product with similar composition.
Inhalation	May cause respiratory irritation.
Eye contact	Causes serious eye damage.
Skin contact	Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Components of the product may be absorbed into the body through the skin.
Ingestion	Harmful if swallowed.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Complex compounds amines based	1500 mg/kg (rat)	200.2 mg/kg (Rabbit)	No data available
Hydrochloric acid	238 mg/kg (rat)	5015.01 mg/kg (Rabbit)	No data available

Chemical Name	IARC Group 1 or 2	ACGIH - Carcinogens	OSHA listed carcinogens	NTP
Complex compounds amines based	No data available	No data available	No data available	No data available
Hydrochloric acid	No data available	A4 - Not Classifiable as a Human Carcinogen	No data available	No data available

Delayed and immediate effects and chronic effects from short and long term exposure

Sensitization May cause allergic skin reaction.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Developmental toxicity Not known to cause birth defects or have a deleterious effect on a developing fetus.

Routes of Exposure Ingestion. Eye contact. Skin contact. Inhalation.

Routes of entry Ingestion. Eye contact. Skin contact. Inhalation.

Specific target organ toxicity - Single exposure Category 3

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Respiratory system. Lungs.

Aspiration hazard Not applicable.

12. Ecological Information

12.1 Toxicity

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Complex compounds amines based	No information available	No information available	No information available
Hydrochloric acid	No information available	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Soluble in water. See component information below.

See component information below.

12.5 Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects.

None known.

13. Disposal Considerations

13.1 Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state and local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

This product was tested in accordance with the IATA Dangerous Goods Classification Procedures, Test Method for Corrosive Substances. The test results has determined that this product is not Corrosive.

14.1. UN number

UN No. (DOT) Not regulated
UN No. (MT/ANTT) Not regulated
UN No. (TDG) Not regulated
UN/ID No. (ADR/RID/ADN/ADG) Not regulated
UN No. (IMDG/ANTAQ) Not regulated
UN No. (ICAO/ANAC) Not regulated
UN No. (DPC) Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

DOT Hazard class	Not regulated
ANTT Hazard class	Not regulated
TDG Hazard class	Not regulated
ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated
DPC Hazard class	Not regulated

14.4 Packing group

DOT Packing group	Not regulated
ANTT Packing group	Not regulated
TDG Packing group	Not regulated
ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated
DPC Packing group	Not regulated

14.5 Environmental hazard

Marine pollutant No

14.6 Special precautions

Not applicable

15. Regulatory Information

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

Europe - REACH

All products supplied from the European Economic Area (EEA) are compliant with the REACH Regulation EC 1907/2006.For products supplied from the EEA, Schlumberger and/or its suppliers have pre-registered and is registering all of the substances that it and/or its suppliers manufactures in or imports into the EEA that are subject to Title II of the REACH Regulation. All products supplied from outside the EEA are subject to REACH only if imported into the EEA. The importer of the products must comply with REACH for each imported substance.

IMPORTS, Canada

No import volume restrictions.

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

Chemical Name	SARA 302 / TPQs	SARA 313	CERCLA RQ
Complex compounds amines based	N/A	N/A	N/A
Hydrochloric acid	500 lb TPQ	1.0 %	5000 lb final RQ 2270 kg final RQ

California Proposition 65

This product does not contain chemical[s] which is [are] known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Canadian Classification

This Safety Data Sheet has been prepared in compliance with the Controlled Products Regulations.

Brazilian Regulations

Brazil Regulation This SDS was prepared in accordance with Brazil law ABNT NBR 14725:2014

Federal Police Not determined

Army Not determined

ANVISA Not determined

MTE (NR 15) No information available

16. Other Information

Supersedes date 04/Aug/2021

Revision date 25/Mar/2022

Version 2

This SDS has been revised in the following section(s) All sections. There have been changes with regard to classification.

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	X

N/A - Not Applicable, N/D - Not Determined.

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Safety Data Sheet

SDS no. PID16796

FORM-A-BLOK*

Revision date 02-Apr-2024 **Supersedes Date:** 08-Jan-2019 **Version** 4

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name FORM-A-BLOK*
Product code PID16796

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Wollastonite (Ca(SiO3))

Cellulose

Kaolin

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Wollastonite (Ca(SiO3))	237-772-5	13983-17-0	30-60
Cellulose	232-674-9	9004-34-6	10-30
Kaolin	310-194-1	1332-58-7	5-10

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the

length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust. Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m^3 (Inhalable); 3 mg/m^3 (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m^3 (Total); 5 mg/m^3 (Respirable).

Component Information

Chemical Name	Arabic	Australia	Egypt

Wollastonite (Ca(SiO3))	Not determined	10mg/m³TWAinhalable dust	Not determined
Cellulose	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Kaolin	75 ppm STEL 356 mg/m³ STEL 50 ppm TWA 238 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined
Cellulose	Not determined	10 mg/m³ TWA	Not determined
Kaolin	Not determined	2 mg/m³ TWA	0.5 mg/m³ OEL 2 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined
Cellulose	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Kaolin	Not determined	15.0 mg/m³ TWA 5.0 mg/m³ TWA	10 mg/m³ TWA 2 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined
Cellulose	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Kaolin	2 mg/m³ TWA	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined
Cellulose	Not determined	10 mg/m³ TWA 5 mg/m³ TWA 20 mg/m³ STEL	Not determined
Kaolin	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable

Respiratory protection No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder - Dust
Color	Gray
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.98	
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Combustible material. Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Wollastonite (Ca(SiO3))	No data available	No data available	No data available
Cellulose	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h
Kaolin	> 5000 mg/kg (Rat)	> 5000 mg/kg (Rat)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Eye contact.

Routes of entry Inhalation. Eye contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Wollastonite (Ca(SiO3))	No information available	No information available	No information available
Cellulose	No information available	No information available	No information available
Kaolin	No information available	No information available	No information available

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Insoluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	This product contains chemical(s) which is/are not listed on DSL but is/are listed on the NDSL.
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08-Jan-2019
Revision date	02-Apr-2024
Version	4
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

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Safety Data Sheet

FORM-A-BLOK* AS

Revision date 10-Jan-2024 **Supersedes Date:** 08-Jan-2019 **Version** 3

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name FORM-A-BLOK* AS
Product code PID20006

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lost circulation material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Cellulose

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Cellulose	232-674-9	9004-34-6	5-10

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Suspended dust may present a dust explosion hazard.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Magnesium oxide, Sulphur oxides, Silicon oxide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid dust formation. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents Strong acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Component Information

Chemical Name	**Arabic**	**Australia**	**Egypt**
Cellulose	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Cellulose	Not determined	10 mg/m³ TWA	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Cellulose	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Cellulose	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**

Cellulose	Not determined	10 mg/m³ TWA 5 mg/m³ TWA 20 mg/m³ STEL	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders
Use protective gloves made of: Nitrile Neoprene
Frequent change is advisable

Respiratory protection No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state Solid
Appearance Fibrous
Color Gray
Odor Slight Aromatic

Property	Values	Remarks
pH	No information available	

pH @ dilution	No information available
Melting / freezing point	No information available
Boiling point/range	No information available
Flash point	No information available
Evaporation rate (BuAc =1)	No information available
Flammability	Not applicable
Explosion limits:	
Upper explosion limit	No information available
Lower explosion limit	No information available
Vapor pressure	No information available
Relative Vapor Density	No information available
Specific gravity	2.23 - 2.4
Bulk density	No information available
Water solubility	Insoluble in water
Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Not known.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cellulose	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Cellulose	No information available	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Insoluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not classified
Group number	Not classified

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	08-Jan-2019
Revision date	10-Jan-2024
Version	3
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	X

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Safety Data Sheet

SDS no. PID20057

FybeCarb*

Revision date 07-Mar-2025 **Supersedes Date:** 30-Nov-2020 **Version** 3

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name FybeCarb*
Product code PID20057

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive. Lost circulation material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA +1 866 928 0789

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Calcium carbonate

Cellulose

Crystalline silica (impurity)

2.3 Other hazards

Combustible dust
Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Calcium carbonate	207-439-9	471-34-1	60-100
Cellulose	232-674-9	9004-34-6	1-5
Crystalline silica (impurity)	238-878-4	14808-60-7	<1

Comments
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Suspended dust may present a dust explosion hazard.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Silicon oxide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If spilled, take caution, as material can cause surfaces to become very slippery. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. After cleaning, flush away traces with water. Take precautionary measures against static discharges.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe dust. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Store away from heat and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Calcium carbonate	Not determined	10mg/m^{3}TWAinhalable dust	Not determined

Cellulose	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Calcium carbonate	Not determined	Not determined	Not determined
Cellulose	Not determined	10 mg/m³ TWA	Not determined
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Calcium carbonate	Not determined	Not determined	10 mg/m³ TWA
Cellulose	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Calcium carbonate	Not determined	Not determined	Not determined
Cellulose	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Calcium carbonate	Not determined	10 mg/m³ TWA	Not determined
Cellulose	Not determined	10 mg/m³ TWA 5 mg/m³ TWA 20 mg/m³ STEL	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

Hand protection
Wear gloves according to EN 374 to protect against skin effects from powders
Use protective gloves made of: Nitrile Neoprene
Frequent change is advisable

Respiratory protection
No personal respiratory protective equipment normally required Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing

before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Granules - Fibers
Color	White - Off-white
Odor	Odorless

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.55 - 2.70	
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Not known.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture. Store away from heat and sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust contact with the eyes can lead to mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Calcium carbonate	= 6450 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 3 mg/L (Rat) 4 h
Cellulose	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h

Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Calcium carbonate	No information available	No information available	No information available
Cellulose	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h LC50 Daphnia manga (pulga Aquatica): > 10000 mg/l 24h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Calcium carbonate	Not Applicable - Inorganic chemical.
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Calcium carbonate	Product/Substance is inorganic
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Calcium carbonate	Insoluble in water
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Calcium carbonate	Not expected to adsorb on soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not Applicable

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	30-Nov-2020
Revision date	07-Mar-2025
Version	3
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2*
Flammability	1
Physical hazard	0
PPE	E

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SDS no. PID686
Version 4
Revision date 01/Dec/2022
Supersedes date None

Safety Data Sheet
G-SEAL* (All Grades)

1. Identification

1.1 Product identifier

Product name G-SEAL* (All Grades)

Product code PID686

Synonyms G-SEAL* FINE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Plugging agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I L.L.C.
P.O.Box 42842
Houston, TX 77242
www.miswaco.slb.com
Telephone: 1 281-561-1511

M-I SWACO, A Schlumberger Company
200 - 125, 9th Avenue SE
Calgary, Alberta T2G 0P6, Canada
Telephone: 1-780-962-8221

E-mail address SDS@slb.com

Prepared by
Global Regulatory Compliance - Chemicals (GRC - Chemicals)

1.4 Emergency Telephone Number

Emergency telephone (24 Hour) Asia Pacific +65 3158 1074, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, USA +1 281 561 1600, Canada +1 800 579 7421, Argentina: +54 11 5984 3690, Brazil : +55 11 3197 5891

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS - Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards

Combustible dust

2.2 Label elements

Signal word
WARNING

Hazard Statements
May form combustible dust concentrations in air

Precautionary Statements
P240 - Ground or bond container and receiving equipment
P241 - Use explosion-proof electrical, ventilating, lighting, equipment
P243 - Take precautionary measures against static discharge

Unknown acute toxicity Not applicable.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	CAS No	Weight-%
Graphite	7782-42-5	60-100

3.2 Mixtures

Not applicable

Comments
The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Suspended dust may present a dust explosion hazard.

Hazardous combustion products
Carbon oxides (COx).

5.3 Advice for firefighters

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment identified in Section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Evacuate and ventilate the area. Prevent further leakage or spillage if safe to do so.

Advice for non-emergency responders
Evacuate non-essential personnel.

Advice for emergency responders
Evacuate personnel to safe areas. Use non-slip safety shoes in areas where spills or leaks can occur. Wear respiratory protection. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. Avoid dust formation. Powdered material may form explosive dust-air mixtures. Use non-sparking tools and equipment.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Fine dust dispersed in air may ignite. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Take precautionary measures against static discharges.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

Storage precautions Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits **Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).**

Chemical Name	ACGIH TLV	OSHA PEL	Argentina - Occupational Exposure Limits - TWAs (CMPs)	Brazil - Occupational Exposure Limits - TWAs (LTs)	Mexico - Occupational Exposure Limits - TWAs (LMPE-PPTs)
Graphite	2 mg/m³	15 mg/m³ TWA 5 mg/m³ TWA 15 mppcf	2 mg/m³ TWA	2 mg/m³ TWA LT (all forms except graphite fibers, respirable particulate matter)	2 mg/m³ TWA VLE-PPT (except graphite fibers, respirable fraction); 10 mg/m³ TWA VLE-PPT (synthetic)

Graphite
OSHA - Final PELs - Table Z-3 Mineral Dusts
15 mppcf TWA (natural)

IDLH (Immediately Dangerous to Life or Health)
Immediately Dangerous to Life or Health (IDLH) is established by the US National Institute for Occupational Safety and Health (NIOSH). The purpose of establishing an IDLH value is to ensure that the worker can escape from a given contaminated

environment in the event of failure of the most protective respiratory protection equipment. In the event of failure of respiratory protection equipment every effort should be made to exit immediately.

Chemical Name	IDLH (Immediately Dangerous to Life or Health)
Graphite 7782-42-5	1250 mg/m³ IDLH (listed under Graphite (natural))

8.2 Exposure controls

A risk assessment is recommended to be performed by a qualified and trained personnel to analyze the worksite and recommends the appropriate controls such as engineering controls, work practice controls, and administrative controls as primary means of reducing employee exposure. When there is a remaining hazards after applying the primary controls, Personal Protective Equipment (PPE) must be used.

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation.

Personal protective equipment

Eye protection	Tightly fitting safety goggles.
Hand protection	Wear chemical resistant gloves such as nitrile or neoprene.
Respiratory Protection	All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.If exposed to airborne mist/aerosol of this product, use an organic vapor cartridge with a P-95 pre-filter attached. In work environments containing oil mist/aerosol, use an organic vapor cartridge with a P-95 pre-filter attached.If exposed to vapors from this product, use a NIOSH/MSHA-approved respirator with an organic vapor cartridge.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Color	Gray - Black
Odor	Odorless
Odor threshold	Not applicable

Property	Values	Remarks
pH		
pH @ dilution	No information available	
Melting point	3652 °C / 6605.6 °F	
Boiling point/range	4827 °C / 8720.6 °F	
Flash point	No information available	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	

Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.0 - 2.3	20 °C
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	> 500 °C / 932 °F	
Decomposition temperature	> 400 °C / 752°F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density and/or Relative Density	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Graphite	10010 mg/kg (rat)	No data available	No data available

Chemical Name	IARC Group 1 or 2	ACGIH - Carcinogens	OSHA listed carcinogens	NTP
Graphite	No data available	No data available	No data available	No data available

Delayed and immediate effects and chronic effects from short and long term exposure

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Developmental toxicity Not known to cause birth defects or have a deleterious effect on a developing fetus.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

12. Ecological Information

12.1 Toxicity

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Graphite	LC50 > 100 mg/l, 96h OECD 203	EC50 > 100 mg/l 72h OECD 201	EC50 > 100 mg/l 48h202

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Insoluble in water.

12.5 Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects.

None known.

13. Disposal Considerations

13.1 Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state and local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

UN No. (DOT) Not regulated
UN No. (MT/ANTT) Not regulated
UN No. (TDG) Not regulated
UN/ID No. (ADR/RID/ADN/ADG) Not regulated
UN No. (IMDG/ANTAQ) Not regulated
UN No. (ICAO/ANAC) Not regulated
UN No. (DPC) Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

DOT Hazard class Not regulated
ANTT Hazard class Not regulated
TDG Hazard class Not regulated
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated
DPC Hazard class Not regulated

14.4 Packing group

DOT Packing group	Not regulated
ANTT Packing group	Not regulated
TDG Packing group	Not regulated
ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated
DPC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

Europe - REACH
All products supplied from the European Economic Area (EEA) are compliant with the REACH Regulation EC 1907/2006.For products supplied from the EEA, Schlumberger and/or its suppliers have pre-registered and is registering all of the substances that it and/or its suppliers manufactures in or imports into the EEA that are subject to Title II of the REACH Regulation. All products supplied from outside the EEA are subject to REACH only if imported into the EEA. The importer of the products must comply with REACH for each imported substance. Contact REACH@slb.com for REACH information.

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

Chemical Name	SARA 302 / TPQs	SARA 313	CERCLA RQ
Graphite	N/A	N/A	N/A

California Proposition 65

This product does not contain chemical[s] which is [are] known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Canadian Classification

This Safety Data Sheet has been prepared in compliance with the Hazardous Products Regulations.

16. Other Information

Revision date 01/Dec/2022

Version 4

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

N/A - Not Applicable, N/D - Not Determined.

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Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SDS no. PID12351
Version 6
Revision date 12-Oct-2022
Supersedes Date: 08-Jul-2018

Safety Data Sheet
G-SEAL* PLUS

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name G-SEAL* PLUS
Product code PID12351

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Plugging agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Graphite

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Graphite	231-955-3	7782-42-5	5-10
Crystalline silica (impurity)	238-878-4	14808-60-7	< 1

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the

length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Graphite	2 mg/m³ TWA	3mg/m³TWArespirable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Graphite	Not determined	2 mg/m³ TWA	2 mg/m³ OEL 0.5 mg/m³ OEL
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Graphite	Not determined	Not determined	3 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Graphite	2 mg/m³ TWA	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC

			Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Graphite	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odor	Odorless
Color	Gray - Black

Property	Values	Remarks
pH	6 - 8	
pH @ dilution	No information available	
Melting / freezing point	3652 °C / 6605.6 °F	
Boiling point/range	4827 °C / 8720.6 °F	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.9 - 2.2	@ 20 °C
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	> 500 °C / > 932 °F	
Decomposition temperature	> 400 °C / > 752 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	Not determined	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Avoid dust formation. Take precautionary measures against static charges.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Graphite	No data available	No data available	> 2000 mg/m³ (Rat) 4 h
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Graphite	> 100 mg/L LC50 Danio rerio 96 h	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08-Jul-2018
Revision date	12-Oct-2022
Version	6
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*
Flammability	1
Physical hazard	0
PPE	X

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SDS no. PID2179
Version 8
Revision date 26-Apr-2023
Supersedes Date: 22-Oct-2018

Safety Data Sheet
IDCAP* D

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name IDCAP* D
Product code PID2179

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive. Shale control agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Granules Dust
Odor	Mild
Color	White

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	6.0 ± 1.00	@ 1%
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.4 - 1.55	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	Not determined	
Density and/or Relative Density	No information available	
Explosive properties	No information available	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.

Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Product is not biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	22-Oct-2018
Revision date	26-Apr-2023
Version	8
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	B

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SDS no. PID857
Version 7
Revision date 27-Jun-2023
Supersedes Date: 09-Nov-2018

Safety Data Sheet
KLA-GARD*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name KLA-GARD*
Product code PID857
Country Limitations This SDS is not for use in the European Union (EU).

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale control agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil. Refer to applicable federal, state and local regulations.

Environmental exposure controls
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Ammonia or amines may be released when this component is heated or exposed to high pH.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Oxidizing agents Acids Bases
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Contains no substances with occupational exposure limit values

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene Break through time >480 minutes Glove thickness >=0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for

vapour/particulate (EN 141) Chemical respirator with ammonia and amines cartridge (K/P2, green filter). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Transparent
Color	Clear - Blue
Odor	Amine

Property	**Values**	**Remarks**
pH	6.5 - 9.0	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	> 99 °C / > 210 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.05 - 1.15	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Ammonia or amines may be released when this component is heated or exposed to high pH.

10.5 Incompatible materials

Oxidizing agents. Acids. Bases.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

This SDS is not for use in the European Union (EU).

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	09-Nov-2018
Revision date	27-Jun-2023
Version	7
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Do not handle until all safety precautions have been read and understood
Follow general hygiene considerations recognized as common good workplace practices

HMIS classification

Health	1

Flammability	1
Physical hazard	0
PPE	B

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SDS no. PID17728
Version 5
Revision date 14-Mar-2023
Supersedes Date: 14-Jul-2018

Safety Data Sheet
KLA-HIB*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name KLA-HIB*
Product code PID17728

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale inhibitor.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves and eye/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Hexanedinitrile, hydrogenated, high-boiling fraction

Hydrochloric acid

Hexane-1,6-diamine

Cyclohex-1,2-ylenediamine

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Hexanedinitrile, hydrogenated, high-boiling fraction	270-153-8	68411-90-5	10-30
Hydrochloric acid	231-595-7	7647-01-0	<15
Hexane-1,6-diamine	204-679-6	124-09-4	10-30
Cyclohex-1,2-ylenediamine	211-776-7	694-83-7	5-10

Comments
H314 does not apply as studies have been performed confirming this substance is an Irritant and not Corrosive to Skin.

Hydrochloric acid added for pH adjustment.

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention at once.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention at once.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapors or spray mist. Use personal protective equipment. Do not get on skin or clothing. Wash thoroughly after handling. See also section 8.

6.2 Environmental precautions

Do not allow material to contaminate ground water system.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Isocyanates Aldehydes Ketones Anhydrides. Phenols Nitrates Acids Halogenated compounds

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Hexanedinitrile, hydrogenated, high-boiling fraction	Not determined	Not determined	Not determined
Hydrochloric acid	Not determined	Not determined	Not determined
Hexane-1,6-diamine	0.5 ppm TWA 2.3 mg/m³ TWA	Not determined	Not determined
Cyclohex-1,2-ylenediamine	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Hexanedinitrile, hydrogenated, high-boiling fraction	Not determined	Not determined	Not determined
Hydrochloric acid	5 ppm Ceiling 7 mg/m³ Ceiling	2 ppm Ceiling	2 ppm Ceiling 3.0 mg/m³ Ceiling
Hexane-1,6-diamine	Not determined	0.5 ppm TWA	Not determined
Cyclohex-1,2-ylenediamine	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Hexanedinitrile, hydrogenated, high-boiling fraction	Not determined	Not determined	Not determined
Hydrochloric acid	5 mg/m³ MAC	7.5 mg/m³ STEL 5.0 ppm STEL	5 ppm Ceiling 7.5 mg/m³ Ceiling
Hexane-1,6-diamine	0.1 mg/m³ MAC	Not determined	Not determined
Cyclohex-1,2-ylenediamine	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Hexanedinitrile, hydrogenated, high-boiling fraction	Not determined	Not determined	Not determined
Hydrochloric acid	5 ppm Ceiling 7.5 mg/m³ Ceiling	Not determined	Acute dangerous substance 5 mg/m³ MAC
Hexane-1,6-diamine	0.5 ppm TWA 2.3 mg/m³ TWA	Not determined	0.1 mg/m³ MAC Allergenic substance
Cyclohex-1,2-ylenediamine	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Hexanedinitrile, hydrogenated, high-boiling fraction	Not determined	Not determined	Not determined
Hydrochloric acid	Not determined	5.0 mg/m³ TWA 7.5 mg/m³ STEL	10 ppm STEL 15 mg/m³ STEL

			5 ppm TWA 8 mg/m³ TWA
Hexane-1,6-diamine	Not determined	Not determined	Not determined
Cyclohex-1,2-ylenediamine	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection — Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield

Hand protection — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Use protective gloves made of: Neoprene Rubber PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection — In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure — Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Pungent
Color	Dark brown

Property	Values	Remarks
pH	9.0-10.0	

pH @ dilution	No information available
Melting / freezing point	No information available
Boiling point/range	~ 100 °C / 212 °F
Flash point	> 100 °C / > 212 °F
Evaporation rate (BuAc =1)	No information available
Flammability	Not applicable
Explosion limits:	
Upper explosion limit	No information available
Lower explosion limit	No information available
Vapor pressure	No information available
Relative Vapor Density	No information available
Specific gravity	1.0 - 1.10
Bulk density	No information available
Water solubility	Soluble in water
Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	Not determined
Density and/or Relative Density	No information available
Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents. Isocyanates. Aldehydes. Ketones. Anhydrides. Phenols. Nitrates. Acids. Halogenated compounds.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information Skin corrision: Not corrosive. - By analogy to product with similar composition.

Inhalation May cause respiratory irritation.

Eye contact Causes serious eye damage.

Skin contact Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Components of the product may be absorbed into the body through the skin.

Ingestion Harmful if swallowed.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hexanedinitrile, hydrogenated, high-boiling fraction	= 1500 mg/kg (Rat)	> 200 mg/kg (Rabbit)	No data available
Hydrochloric acid	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h
Hexane-1,6-diamine	= 750 mg/kg (Rat)	= 1110 mg/kg (Rabbit)	No data available
Cyclohex-1,2-ylenediamine	= 4556 mg/kg (Rat)	= 1870 mg/kg (Rat)	> 3.23 mg/L (Rat) 4 h

Sensitization May cause allergic skin reaction.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Ingestion. Eye contact. Skin contact. Inhalation.

Routes of entry Ingestion. Eye contact. Skin contact. Inhalation.

Specific target organ toxicity - Single exposure Category 3

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Respiratory system. Lungs.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

This product contains an ingredient that is classified, according to European regulations, as "harmful to aquatic organisms, may

cause long-term adverse effects in the aquatic environment". However, at the concentration present, this preparation is not expected to present significant adverse environmental effects.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Hexanedinitrile, hydrogenated, high-boiling fraction	No information available	No information available	No information available
Hydrochloric acid	No information available	No information available	No information available
Hexane-1,6-diamine	= 1825 mg/L LC50 Pimephales promelas 96 h > 56 mg/L LC50 Lepomis macrochirus 96 h	= 15 mg/L EC50 Pseudokirchneriella subcapitata 72 h = 14.8 mg/L EC50 Pseudokirchneriella subcapitata 96 h	= 23.4 mg/L EC50 Daphnia magna 48 h
Cyclohex-1,2-ylenediamine	No information available	No information available	No information available

12.2 Persistence and degradability

Product is biodegradable. See component information below.

Chemical Name	Persistence and degradability
Hexanedinitrile, hydrogenated, high-boiling fraction	Readily biodegradable
Hydrochloric acid	Not Applicable - Inorganic chemical.
Hexane-1,6-diamine	Readily biodegradable
Cyclohex-1,2-ylenediamine	Readily biodegradable

12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

Chemical Name	Bioaccumulation
Hydrochloric acid	Not Applicable - Inorganic chemical.
Hexane-1,6-diamine	Does not bioaccumulate
Cyclohex-1,2-ylenediamine	No information available

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Hydrochloric acid	Soluble in water
Hexane-1,6-diamine	Easily soluble
Cyclohex-1,2-ylenediamine	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Hydrochloric acid	Not expected to adsorb on soil
Hexane-1,6-diamine	Not expected to adsorb on soil
Cyclohex-1,2-ylenediamine	No information available

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

This product was tested in accordance with the IATA Dangerous Goods Classification Procedures, Test Method for Corrosive Substances. The test results has determined that this product is not Corrosive.

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Hydrochloric acid
Schedule 6
Schedule 5

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	6.1D, 6.1E, 6.3A, 6.5B, 8.3A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	14-Jul-2018
Revision date	14-Mar-2023
Version	5
This SDS has been revised in the following section(s)	All sections There have been changes with regard to classification.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	J

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Safety Data Sheet

SDS no. PID12074

KLA-STOP*

Revision date 13-Jun-2024 **Supersedes Date:** 03-May-2023 **Version** 11

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name KLA-STOP*
Product code PID12074

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale inhibitor.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin corrosion/irritation	Category 1 Subcategory 1C
Serious eye damage/eye irritation	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H314 - Causes severe skin burns and eye damage

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves and eye/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse

Contains
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	-	9046-10-0	60-100

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Skin contact Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention at once.

4.2. Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
High volume water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG 2X

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid contact with eyes. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids

Storage class Corrosive storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Contains no substances with occupational exposure limit values

Component Information

Chemical Name	Arabic	Australia	Egypt
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene Rubber Break through time >480 minutes Glove thickness >=0.4 Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	Colorless
Odor	Ammoniacal

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	9.2 - 10.2	@ 5%
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	> 93 °C / > 200 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.0 - 1.075	
Bulk density	No information available	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	

Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Corrosive.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Not known.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Vapors may irritate throat and respiratory system. Inhaled corrosive substances can lead to a toxic edema of the lungs.
Eye contact	Causes burns. May cause irreversible damage to eyes.
Skin contact	Causes severe skin burns.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	2885 mg/kg (Rat) OECD 401	2979 mg/kg (Rabbit) OECD 402	> 0.74 mg/l (Rat) OECD 403

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Eye contact. Skin contact.

Routes of entry Inhalation. Eye contact. Skin contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	LC50 >700 mg/l 96h	EC50 >700 mg/l 72h	EC50 >1001 mg/l 48h

12.2 Persistence and degradability

Product is not biodegradable. See component information below.

Chemical Name	Persistence and degradability
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Not biodegradable

12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

Chemical Name	Bioaccumulation
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups	Does not bioaccumulate

12.4 Mobility

Mobility
The product is miscible with water. May spread in water systems.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN2735
UN No. (IMDG/ANTAQ)	UN2735
UN No. (ICAO/ANAC)	UN2735

14.2. UN proper shipping name

AMINES, LIQUID, CORROSIVE, N.O.S. (contains Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups)

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	8
IMDG/ANTAQ Hazard class	8
ICAO/ANAC Hazard class/division	8

14.4 Packing group

ADR/RID/ADN/ADG Packing group	III
IMDG/ANTAQ Packing group	III
ICAO/ANAC Packing group	III



14.5 Environmental hazard

No

14.6 Special precautions

Hazard identification no (ADR)	80
EmS (IMDG)	F-A, S-B
Emergency Action Code (EAC)	2X
Tunnel restriction code	(E)
Hazchem code ADG	2X

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2020

HSNO approval no.	HSR002491
Group number	8.3A, 8.2C

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	03-May-2023
Revision date	13-Jun-2024
Version	11
This SDS has been revised in the following section(s)	1, 8, 9, No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	1
Physical hazard	0
PPE	X

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Disclaimer

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Kelco Oil Field Group

A HUBER COMPANY

Safety Data Sheet

Kwik-Seal® Fine, Medium, Coarse

According to WHS Act and the Work Health and Safety Regulations (theWHS Regulations), Section 274.
New Zealand HSNO Chemical Classification
GHS (Globally Harmonized System)

SECTION 1: Identification: Product identifier and chemical identity

1.1. Product identifier

Product Name: Kwik-Seal® Fine, Medium, Coarse

Wood, wood fibers, ground hulls or shells
CAS Number --
Synthetic flakes
CAS Number --

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lost circulation material.

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Company:

CP Kelco U.S., Inc.
A Huber Company
3000 Cumberland Blvd, Suite 600
Atlanta, GA 30339 USA
tel: +1 (678) 247-7300

Kelco Oil Field Group
Regus House
1 Berry Street
Aberdeen, Scotland
AB25 1HF
UK
Tel: +44 1224 843784

Internet www.cpkelco.com

E-mail customer.request@cpkelco.com

1.4. Emergency telephone number

CHEMTREC: +1 800 424 9300 or International +1 703 527 3887
In Asia Pacific: +65 6491 9100
EU KOFG Phone: +44 (0) 1224 843 784 Aberdeen, Scotland

SECTION 2: Hazard(s) Identification

2.1. Classification of the substance or mixture

Physical Hazards Not classified

Health Hazards Not classified

Environmental Hazard Not classified

2.2. Label elements

Symbols/Pictograms None.

Signal Word None.

Hazard Statement None

Precautionary Statements

Prevention Employ good industrial hygiene practice. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wear protective gloves/protective clothing/eye protection/face protection. Combustible dust may form combustible (explosive) dust-air mixtures. Take precautionary measures against static discharges.

Response IF exposed or concerned: Get medical advice/attention. Wash with plenty of soap and water.

Storage Store away from incompatible materials. Keep in a dry place.

Disposal Dispose of contents/containers in accordance with local regulations.

Hazards not otherwise classified (HNOC) COMBUSTIBLE DUST MAY FORM COMBUSTIBLE (EXPLOSIVE) DUSTAIR MIXTURES. Slippery, can cause falls if walked on.

SECTION 3: Composition and Information on Ingredients

Chemical Name	Australia (AIIC)	New Zealand	TSCA: United States	Hazardous Substances
Wood, wood fibers, ground hulls or shells CAS NUMBER-N/A	-	-	-	No
Synthetic flakes CAS NUMBER-N/A	-	-	-	No

SECTION 4: First Aid Measures

4.1. Description of first aid measures

Eye Contact	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact	Wash with plenty of soap and water.
Ingestion	Rinse mouth thoroughly with water.
Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
4.2. Most important symptoms and effects, both acute and delayed	None known.
4.3. Indication of any immediate medical attention and special treatment needed	Treat symptomatically. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

SECTION 5: Fire Fighting Measures

5.1. Extinguishing media

Suitable Extinguishing Media	Water spray (fog). Dry chemical. Foam.
Unsuitable Extinguishing Media	None known.
5.2. Special hazards arising from the substance or mixture	Avoid dust formation.
Hazardous Combustion Products	Carbon dioxide Carbon monoxide aldehydes organic acids

5.3. Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective suit.
Fire-fighting measures	COMBUSTIBLE DUST MAY FORM COMBUSTIBLE (EXPLOSIVE) DUSTAIR MIXTURES.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures Avoid dust formation. Avoid inhalation of dust. Use personal protection recommended in Section 8.

For non-emergency personnel Keep unauthorized personnel away.

For emergency responders Keep unauthorized personnel away. Use personal protection recommended in Section 8.

6.2. Environmental precautions Avoid runoff to waterways and sewers. Dispose of in accordance with federal, state and local regulations.

6.3. Methods and material for containment and cleaning up Large Spill:. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Small Spill:. Vacuum or sweep material and place in a disposal container.

6.4. Reference to other sections Section 8: Exposure controls and personal protection. See Section 13 for additional waste treatment information.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid contact with skin, eyes or clothing. Avoid prolonged contact with material. Use personal protection recommended in Section 8. Employ good industrial hygiene practice.

7.2. Conditions for safe storage, including any incompatibilities Keep container tightly closed and dry. Store away from incompatible materials. See section 10.

SECTION 8: Exposure controls and personal protection

8.1. Control parameters

Occupational exposure limits

Wood, wood fibers, ground hulls or shells

Exposure limits Not established

Synthetic flakes

Exposure limits Not established

The creation of aerosols should be avoided.

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).

Skin and Body Protection Wear suitable protective clothing.

Hand protection For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

Respiratory Protection Use NIOSH/MSHA approved respiratory protection equipment when airborne exposures exceeds established guidelines.

Thermal hazards None known.

Hygiene Measures Follow general hygiene considerations recognized as common good workplace practices

Environmental Exposure Controls Dispose of in accordance with local regulations

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State Flakes. granulate.

Form Not determined

Color Tan to Brown

Odor Mild

Odor Threshold No information available

pH: No information available

pH:

Melting Point / Melting Range Not applicable

Boiling Point Not applicable

Flash Point Not applicable

Evaporation Rate	Not applicable
Flammability (solid, gas)	Combustible
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Water Solubility	Insoluble
Partition coefficient	No information available
Autoignition Temperature	Not applicable
Oxidizing Properties	Not applicable
Fat solubility (g/l)	None

SECTION 10: Stability and Reactivity

10.1. Reactivity	No data available
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	None under normal processing
10.4. Conditions to avoid	Keep away from heat, sparks and flame.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	Carbon dioxide (CO2) Nitrogen oxides (NOx) Organic acids Aldehydes Cyanide compounds Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration

SECTION 11: Toxicological Information

General Information	Users are advised to consider national Occupational Exposure Limits or other equivalent values.

Information on Likely Routes of Exposure

Inhalation	Inhalation of dust may cause irritation of the respiratory system. May cause respiratory tract irritation.
Skin	Prolonged exposure may cause skin irritation.

Eyes	May cause irritation.
Ingestion	None known.
Symptoms	Inhalation of dust may cause irritation of the respiratory system

11.1. Information on toxicological effects

Acute Toxicity	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory Sensitization	Based on available data, the classification criteria are not met.
Skin Corrosion/Irritation	Prolonged or repeated contact may dry skin and cause irritation.
Skin Sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Reproductive Effects	This product does not contain any known or suspected reproductive hazards.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Specific target organ toxicity - Single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - Repeated exposure	Based on available data, the classification criteria are not met.
Chronic Effects	Based on available data, the classification criteria are not met.

SECTION 12: Ecological Information

12.1. Ecotoxicity Not classified.

Wood, wood fibers, ground hulls or shells - CAS NUMBER-N/A

96-Hour LC50	Crustacea 1000000 ppm Acute

Synthetic flakes - CAS NUMBER-N/A

96-Hour LC50	Crustacea 1000000 ppm Acute

12.2. Persistence and Inherently biodegradable, not fulfilling criteria.

degradability

12.3. Bioaccumulative potential No information available.

Partition coefficient Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects None known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste codes Waste codes should be assigned by the user based on the application for which the product was used

Disposal Methods Dispose of waste product or used containers according to local regulations

SECTION 14: Transport Information

Mode of Transportation (Road, Water, Air, Rail)

ICAO	Not regulated
IMDG/IMO	Not regulated
RID	Not regulated
DOT	Not regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global Inventories

Chemical Name	CAS Number	Australia (AIIC)	Canada (DSL)	China (IECSC)	EU REACH registration number	EC No	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United States
Wood, wood fibers, ground hulls or shells	--	-	-	-	--	--	-	-	-	-	-	-	-
Synthetic flakes	--	-	-	-	--	--	-	-	-	-	-	-	-

Legend
X / Y: Complies ; A: Active ; - / N: Exempt / Not Listed

SECTION 16: Other information

Prepared by
CP Kelco Global Regulatory Affairs
Email: Regulatory.Affairs@cpkelco.com

Reason for Revision
According to WHS Act and the Work Health and Safety Regulations (theWHS Regulations), Section 274.
New Zealand HSNO Chemical Classification
GHS (Globally Harmonized System)

Hazards identification

Physical Hazards Not classified

Health Hazards Not classified

Environmental Hazard Not classified

Labeling

Symbols/Pictograms None.

Signal Word None.

Hazard Statement None

Training Advice Do not handle until all safety precautions have been read and understood.

Abbreviations and acronyms
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods)
IUCLID (International Uniform Chemical Information Database)
WHMIS (Workplace Hazardous Materials Information System)
EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification
DOT (Department of Transportation)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
TWA (Time-Weighted Average)
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA)
CLP (The Classification, Labeling and Packaging of Substances and Mixtures Regulation (EC 1272/2008))
PPE (Personal Protection Equipment)
NIOSH (National Institute for Occupational Safety and Health)
TDG (Transport of Dangerous Goods) Canada

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
RQ (Reportable Quantity) (RQ/% in mixture)
STEL (Short Term Exposure Limit)
TLV® (Threshold Limit Value)
DNEL (Derived No Effect Level)
SVHC (Substances of Very High Concern)
Land transport (ADR/RID)
BOD (Biochemical oxygen demand)
COD (Chemical oxygen demand)
ICAO (International Civil Aviation Organization)
IMDG (International Maritime Dangerous Goods)
SCBA (Self-Contained Breathing Apparatus) Positive Pressure
PNEC (Predicted No Effect Concentration)
GHS (Globally Harmonized System)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

Safety Data Sheet

LIME

Revision date 14-Jun-2023 **Supersedes Date:** 09-Jul-2015 **Version** 9

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name LIME
Product code PID904

Synonyms CALCIUM HYDROXIDE, HYDRATKALK

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive. pH modifier

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Precautionary statements
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Contains
Calcium hydroxide

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Calcium hydroxide	215-137-3	1305-62-0	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Water.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Calcium oxide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Avoid dust formation. Sweep up and shovel into suitable containers for disposal.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Acids
Storage class	Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Calcium hydroxide	5 mg/m³ TWA	5mg/m³TWA	5 mg/m³ TWA
Chemical Name	**India**	**Indonesian**	**Japan**
Calcium hydroxide	Not determined	5 mg/m³ TWA	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Calcium hydroxide	2 mg/m³ MAC	15.0 mg/m³ TWA 5.0 mg/m³ TWA	5 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Calcium hydroxide	5 mg/m³ TWA	Not determined	Skin notation 2 mg/m³ MAC Skin
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Calcium hydroxide	15 mg/m³ TWA 5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation, especially in confined areas Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against dusts Wear chemical splash goggles and face shield

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders
Wear protective nitrile rubber gloves
Frequent change is advisable

Respiratory protection No personal respiratory protective equipment normally required Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing and gloves Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	White - Off-white
Odor	Odorless

Property	Values	Remarks
pH	12.4	
pH @ dilution	No information available	
Melting / freezing point	> 450 °C / > 842 °F	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.24	20 °C
Bulk density	400 Kg/m³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Acids. Water.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause respiratory irritation. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Eye contact Causes serious eye damage.

Skin contact Causes skin irritation.

Ingestion Ingestion may cause stomach discomfort. May cause additional affects as listed under "Inhalation".

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Calcium hydroxide	= 7340 mg/kg (Rat)	> 2500 mg/kg (Rat)	> 6.04 mg/L (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Eye contact. Skin contact. Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Category 3
Specific target organ toxicity - Repeated exposure	Not classified.
Target organ effects	Respiratory system.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Calcium hydroxide	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Calcium hydroxide	Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Calcium hydroxide	No bioaccumulation potential

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Calcium hydroxide	Easily soluble

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Calcium hydroxide	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	09-Jul-2015
Revision date	14-Jun-2023
Version	9
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier

National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	0
Physical hazard	0
PPE	E

Disclaimer

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SAFETY DATA SHEET
MAGNESIUM OXIDE >=85-100%
REVISION 6, DATE 09 MAR 2022

1. IDENTIFICATION

Product Name	**Magnesium Oxide >=85-100%**
Other Names	No Data Available
Uses	Agricultural, chemical and pharmaceutical chemical.
Chemical Family	No Data Available
Chemical Formula	MgO
Chemical Name	Magnesium oxide
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not Scheduled

Globally Harmonised System

Hazard Classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia
National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	NOT hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Magnesium oxide	MgO	1309-48-4	>=85 - 100 %
Ingredients determined not to be hazardous	Unspecified	Unspecified	Balance %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention.
Advice to Doctor	Treat symptomatically. *Most important symptoms and effects, both acute and delayed: Irritant to upper respiratory tract. Inhalation can cause a flu-like illness (metal fume fever). This 24- to 48- hour illness is characterized by chills, fever, aching muscles, dryness in the mouth and throat, and headache.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Dike fire-control water for later disposal.
Flammability Conditions	Non-combustible.
Extinguishing Media	If material is involved in a fire, use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	No information available.
Hazardous Products of Combustion	May emit toxic fumes under fire conditions.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Carefully shovel or sweep up spilled material and place in suitable container.
Containment	Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas.
Decontamination	Clean contaminated objects and areas thoroughly observing environmental regulations.
Environmental Precautionary Measures	Prevent entry into drains and waterways.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Avoid exposure to air and moisture. Keep away from heat and sources of ignition - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For Magnesium oxide (fume):

	- Safe Work Australia Exposure Standard: TWA = 10 mg/m3. - New Zealand Workplace Exposure Standard [Next review 2023]: TWA = 10 mg/m3.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical safety goggles. - Hand protection: Handle with gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder or granules
Odour	Odourless
Colour	White or beige/brown
pH	10.3 (saturated aqueous solution)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	3,600 °C
Melting Point	2,500 - 2,800 °C
Freezing Point	No Data Available
Solubility	Practically insoluble in water; Insoluble in alcohol - Soluble in diluted acids
Specific Gravity	1.4 - 1.5
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available

VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible.
Reactions That Release Gases or Vapours	May emit toxic fumes under fire conditions.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	Hygroscopic.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid generating dust. Avoid moisture and air exposure.
Materials to Avoid	Incompatible/reactive with strong acids, strong oxidising agents, interhalogens.
Hazardous Decomposition Products	May emit toxic fumes under fire conditions.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information

Information on toxicological effects:
- Acute toxicity: No known effect.
- Skin corrosion/irritation: No known effect.
- Eye damage/irritation: No known effect.
- Respiratory/skin sensitisation: No information available.
- Germ cell mutagenicity: No information available.
- Carcinogenicity: No information available.
- Reproductive toxicity: No information available.
- STOT (single exposure): No information available.
- STOT (repeated exposure): No information available.
- Aspiration toxicity: No information available.

Information on likely routes of exposure:
- Ingestion: May cause gastrointestinal discomfort if consumed in large amounts.
- Eye contact: Dust contact with the eyes can lead to mechanical irritation.
- Skin contact: May cause irritation.
- Inhalation: May cause irritation.

Chronic effects: No information available.

Acute

Ingestion

Acute toxicity (Oral):
COMPONENT: Magnesium oxide:
- LD50: 3,870 mg/kg (male) & 3,990 mg/kg (female) [Supplier's SDS].

Inhalation	Acute toxicity (Inhalation): COMPONENT: Magnesium oxide: - LC50: >3.88 mg/L [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	Not relevant for inorganic salts.
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	Not expected to bioaccumulate.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations.
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Magnesium oxide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)
ADR Code

Proper Shipping Name	Magnesium oxide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available

Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Magnesium oxide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)
US DOT

Proper Shipping Name	Magnesium oxide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Magnesium oxide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	MAGNESIUM OXIDE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available

Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	Not Hazardous

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	Not Determined
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (List of Classified Substances)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed
USA (TSCA)	Listed
Mexico (INSQ)	Not Determined

16. OTHER INFORMATION

Related Product Codes	MAGOXB1000, MAGOXB6000, MAGOXB6100, MAGOXB6200, MAGOXI0002, MAGOXI0003, MAGOXI0004, MAGOXI0005, MAGOXI0085, MAGOXI0086, MAGOXI0090, MAGOXI0091, MAGOXI0095, MAGOXI0097, MAGOXI0100, MAGOXI0101, MAGOXI0102, MAGOXI0106, MAGOXI0150, MAGOXI0170, MAGOXI0200, MAGOXI0201, MAGOXI0202, MAGOXI0300, MAGOXI0301, MAGOXI0302, MAGOXI0303, MAGOXI0304, MAGOXI0400, MAGOXI0499, MAGOXI0500, MAGOXI0501, MAGOXI0502, MAGOXI0503, MAGOXI0600, MAGOXI0601, MAGOXI0671, MAGOXI0672, MAGOXI0675, MAGOXI0676, MAGOXI0700, MAGOXI0701, MAGOXI0702, MAGOXI0800, MAGOXI0900, MAGOXI0901, MAGOXI1000, MAGOXI1001, MAGOXI1002, MAGOXI1003, MAGOXI1004, MAGOXI1005, MAGOXI1006, MAGOXI1007, MAGOXI1008, MAGOXI1009, MAGOXI1010, MAGOXI1011, MAGOXI1012, MAGOXI1013, MAGOXI1014, MAGOXI1015, MAGOXI1016, MAGOXI1017, MAGOXI1018, MAGOXI1019, MAGOXI1020, MAGOXI1021, MAGOXI1022, MAGOXI1023, MAGOXI1024, MAGOXI1025, MAGOXI1026, MAGOXI1027, MAGOXI1028, MAGOXI1029, MAGOXI1030, MAGOXI1031, MAGOXI1032, MAGOXI1033, MAGOXI1034, MAGOXI1035, MAGOXI1045, MAGOXI1050, MAGOXI1051, MAGOXI1100, MAGOXI1101, MAGOXI1102, MAGOXI1103, MAGOXI1105, MAGOXI1108, MAGOXI1133, MAGOXI1180, MAGOXI1199, MAGOXI1200, MAGOXI1201, MAGOXI1215, MAGOXI1300, MAGOXI1301, MAGOXI1302, MAGOXI1310, MAGOXI1311, MAGOXI1315, MAGOXI1316, MAGOXI1317, MAGOXI1318, MAGOXI1319, MAGOXI1320, MAGOXI1350, MAGOXI1353, MAGOXI1360, MAGOXI1391, MAGOXI1392, MAGOXI1400, MAGOXI1401, MAGOXI1402, MAGOXI1500, MAGOXI1501, MAGOXI1600, MAGOXI1601, MAGOXI1602, MAGOXI1603, MAGOXI1604, MAGOXI1700, MAGOXI1701, MAGOXI1702, MAGOXI1703, MAGOXI1800, MAGOXI1801, MAGOXI1802, MAGOXI1803, MAGOXI1804, MAGOXI1805, MAGOXI1806, MAGOXI1807, MAGOXI1808, MAGOXI1809, MAGOXI1810, MAGOXI1900, MAGOXI1901, MAGOXI2000, MAGOXI2100, MAGOXI2160, MAGOXI2200, MAGOXI2300, MAGOXI2400, MAGOXI2500, MAGOXI2700, MAGOXI2701, MAGOXI2800, MAGOXI2801, MAGOXI2802, MAGOXI2805, MAGOXI2808, MAGOXI2900, MAGOXI2901, MAGOXI2902, MAGOXI3001, MAGOXI3002, MAGOXI3003, MAGOXI3010, MAGOXI3020, MAGOXI3100, MAGOXI3110, MAGOXI3200, MAGOXI3300, MAGOXI3301, MAGOXI3302, MAGOXI3400, MAGOXI3401, MAGOXI3402, MAGOXI3500, MAGOXI3501, MAGOXI3502, MAGOXI3600, MAGOXI3700, MAGOXI3701, MAGOXI3800, MAGOXI3801, MAGOXI3900, MAGOXI3901, MAGOXI4000, MAGOXI4001, MAGOXI4002, MAGOXI4100, MAGOXI4101, MAGOXI4200, MAGOXI4500, MAGOXI4501, MAGOXI4600, MAGOXI4601, MAGOXI4700, MAGOXI4701, MAGOXI4702, MAGOXI4703, MAGOXI4708, MAGOXI4709, MAGOXI4800, MAGOXI4801, MAGOXI4900, MAGOXI4901, MAGOXI5000, MAGOXI5001, MAGOXI5002, MAGOXI5100, MAGOXI5101, MAGOXI5200, MAGOXI5201, MAGOXI5300, MAGOXI5301, MAGOXI5510, MAGOXI5511, MAGOXI5512, MAGOXI5513, MAGOXI5515, MAGOXI5520, MAGOXI5521, MAGOXI5522, MAGOXI5523, MAGOXI5525, MAGOXI5526, MAGOXI5527, MAGOXI5528, MAGOXI5529, MAGOXI5530, MAGOXI5700, MAGOXI5750, MAGOXI5751, MAGOXI5800, MAGOXI5801, MAGOXI5802, MAGOXI5900, MAGOXI5901, MAGOXI6000, MAGOXI6001, MAGOXI6002, MAGOXI6003, MAGOXI6004, MAGOXI6005, MAGOXI6006, MAGOXI6007, MAGOXI6100, MAGOXI6101, MAGOXI6102, MAGOXI6103, MAGOXI6105, MAGOXI6200, MAGOXI6201, MAGOXI6202, MAGOXI6203, MAGOXI6262, MAGOXI6300, MAGOXI6301, MAGOXI6303, MAGOXI6400, MAGOXI6401, MAGOXI6402, MAGOXI6403, MAGOXI6404, MAGOXI6405, MAGOXI6406, MAGOXI6407, MAGOXI6408, MAGOXI6409, MAGOXI6410, MAGOXI6414, MAGOXI6444, MAGOXI6445, MAGOXI6500, MAGOXI6501, MAGOXI6502, MAGOXI6503, MAGOXI6504, MAGOXI6505, MAGOXI6506, MAGOXI6507, MAGOXI6508, MAGOXI6509, MAGOXI6510, MAGOXI6520, MAGOXI6587, MAGOXI6588, MAGOXI6589, MAGOXI6590, MAGOXI6600, MAGOXI6601, MAGOXI6602, MAGOXI6603, MAGOXI6700, MAGOXI6701, MAGOXI6800, MAGOXI6801, MAGOXI6802, MAGOXI6900, MAGOXI7000, MAGOXI7001, MAGOXI7002, MAGOXI7003, MAGOXI7004, MAGOXI7100, MAGOXI7101, MAGOXI7200, MAGOXI7300, MAGOXI7400, MAGOXI7500, MAGOXI7600, MAGOXI7601, MAGOXI7700, MAGOXI7701, MAGOXI7800, MAGOXI7801, MAGOXI7900, MAGOXI7901, MAGOXI8000, MAGOXI8001, MAGOXI8002, MAGOXI8003, MAGOXI8004, MAGOXI8100, MAGOXI8200, MAGOXI8300, MAGOXI8400, MAGOXI8401, MAGOXI8500, MAGOXI8600, MAGOXI8700, MAGOXI8701, MAGOXI8800, MAGOXI8900, MAGOXI9000, MAGOXI9001, MAGOXI9002, MAGOXI9003, MAGOXI9100, MAGOXI9200, MAGOXI9201, MAGOXI9202, MAGOXI9300, MAGOXI9310, MAGOXI9400, MAGOXI9401, MAGOXI9500, MAGOXI9501, MAGOXI9600, MAGOXI9601, MAGOXI9700, MAGOXI9701, MAGOXI9800, MAGOXI9810, MAGOXI9811, MAGOXI9900, MAGOXI9901, MAGOXL1000, MAGOXM1000, MAGOXP0600, MAGOXP1000, MAGOXP1500, MAGOXP2000, MAGOXP3000, MAGOXP4200, MAGOXP5000, MAGOXP5100, MAGOXP5200, MAGOXP5250, MAGOXP5300, MAGOXP9000, MAGOXP9800, MAGOXP9801
Revision	6
Revision Date	09 Mar 2022
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** Square Centimetres **CO2** Carbon Dioxide **COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius **EPA (New Zealand)** Environmental Protection Authority of New Zealand **deg F (°F)** Degrees Farenheit **g** Grams **g/cm^3** Grams per Cubic Centimetre

g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH2O Inch of Water
K Kelvin
kg Kilogram
kg/m^3 Kilograms per Cubic Metre
lb Pound
LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or **L** Litre
m^3 Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m^3 Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH2O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight

SDS no. PID11307
Version 10
Revision date 12-Dec-2022
Supersedes Date: 08-Jul-2018

Safety Data Sheet
M-I-X* II (All Grades)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name M-I-X* II (All Grades)
Product code PID11307

Synonyms M-I-X* II FINE, M-I-X* II MEDIUM, M-I-X* II COARSE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lost circulation material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

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Contains
Cellulose

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Cellulose	Listed	Proprietary	60-100
Crystalline silica (impurity)	238-878-4	14808-60-7	<1

3.2 Mixtures

Not applicable

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Combustible material. Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors Silicon oxide, Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Cellulose	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Cellulose	Not determined	10 mg/m³ TWA	Not determined
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Cellulose	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Cellulose	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is

			for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Cellulose	Not determined	10 mg/m³ TWA 5 mg/m³ TWA 20 mg/m³ STEL	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable
Respiratory protection	No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Odor	Odorless
Color	Light brown

Property	Values	Remarks
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.1 - 1.65	@ 20 °C
Bulk density	352-513 kg/m³ / 22-32 lb/ft³	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Combustible material. Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Avoid dust formation. Take precautionary measures against static charges. Protect from moisture.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cellulose	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Cellulose	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

This product is expected to be readily biodegradable. See component information below.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08-Jul-2018
Revision date	12-Dec-2022
Version	10
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3*
Flammability	1
Physical hazard	0
PPE	X

*A mark of M-I L.L.C., a Schlumberger Company

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The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS

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SAFETY DATA SHEET

NUOSEPT 78

Section 1. Identification

Product identifier : NUOSEPT 78

Product code : 83256

Chemical identity : 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol

Other means of identification : Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine

Product type : Liquid.

Material uses : Preservative.

Supplier's details : Chemiplas Australia Pty Ltd
Level 1, 128 Jolimont Rd
East Melbourne,
VIC 3002 Australia

Tel: + 61 3 9419 7300
Fax: + 61 3 9419 7676

Manufacturer : Troy Siam Company Limited
616/1 Moo. 9 Kabinburi Industrial Zone,
Kabinburi-Korat Road, T, Nongki,
A. Kabinburi, Prachinburi 25110
Thailand
Phone: +66-37-204-243/250
Fax: +66-37-204 268

Emergency telephone number (with hours of operation) : CHEMTREC - Tel: +1-703-741-5970 (24/7)

Section 2. Hazard(s) identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :



Signal word : **WARNING**

Hazard statements : **Harmful if swallowed.**
May cause an allergic skin reaction.
Causes serious eye irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection: Recommended: chemical splash goggles and/or face shield.. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Section 2. Hazard(s) identification

Response : Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Chemical identity : 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol

Other means of identification : Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine

CAS number/other identifiers

CAS number : Not available.

EC number : Not available.

Product code : 83256

Ingredient name	% (w/w)	CAS number
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	78	4719-04-4
2-aminoethanol	1-3	141-43-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire. Warehousing: All materials except Oxidizers can be extinguished by replacing the available air with CO2 when a stationary CO2 installation is installed.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Excessive heat >147°C (>297°F) will result in decomposition to formaldehyde.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store between the following temperatures: -5 to 30°C (23 to 86°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2-aminoethanol	**Safe Work Australia (Australia, 4/2018).** STEL: 15 mg/m³ 15 minutes. STEL: 6 ppm 15 minutes. TWA: 7.5 mg/m³ 8 hours. TWA: 3 ppm 8 hours.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: chemical splash goggles and/or face shield.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Clear. Colorless. Yellowish.

Odor : Characteristic. [Slight]

Odor threshold : Not available.

pH : 9 to 12

Melting point/freezing point : Not available.

Boiling point : 110.5°C (230.9°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Excessive heat >147°C (>297°F) will result in decomposition to formaldehyde.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 1.3 to 2.4 kPa (10 to 18 mm Hg) [room temperature]

Vapor density : >1 [Air = 1]

Relative density : 1.145 to 1.175

Solubility : Soluble in the following materials: cold water and hot water.

Partition coefficient: n-octanol/water : -1.3

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): 60 to 100 mPa·s (60 to 100 cP)
Kinematic (room temperature): 0.6 to 1 cm^2/s (60 to 100 cSt)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
NUOSEPT 78	LD50 Dermal LD50 Oral	Rat Rat - Female	>2000 mg/kg 1009 to 3950 mg/kg	- -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
NUOSEPT 78	Eyes - Cornea opacity Skin - Mild irritant	Rabbit Rabbit	59 -	- -	21 days -

Sensitization

Product/ingredient name	Route of exposure	Species	Result
NUOSEPT 78	skin	Mouse	Sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
NUOSEPT 78	-	Experiment: In vivo Subject: Mammalian-Animal	Negative

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
NUOSEPT 78	Acute EC50 10 to 100 mg/l Acute LC50 10 to 100 mg/l	Daphnia Fish	48 hours 96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-aminoethanol	-	>90 % - Readily - 21 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
NUOSEPT 78	-	-	Readily

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
NUOSEPT 78	-1.3	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA/ICAO
UN number	Not regulated	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : All components are listed or exempted.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Canada	:	All components are listed or exempted.
China	:	All components are listed or exempted.
Europe	:	All components are listed or exempted.
Japan	:	**Japan inventory (ENCS)**: All components are listed or exempted. **Japan inventory (ISHL)**: All components are listed or exempted.
Malaysia	:	Not determined
New Zealand	:	All components are listed or exempted.
Philippines	:	All components are listed or exempted.
Republic of Korea	:	All components are listed or exempted.
Taiwan	:	All components are listed or exempted.
United States	:	All components are listed or exempted.

Section 16. Any other relevant information

History

Date of printing	:	10/20/2021
Date of issue/Date of revision	:	10/20/2021
Date of previous issue	:	7/26/2019
Version	:	1.02
Key to abbreviations	:	ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission

Section 16. Any other relevant information

SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Expert judgment
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Expert judgment
SKIN SENSITIZATION - Category 1	Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SDS no. PID1146
Version 8
Revision date 18-Feb-2022
Supersedes Date: 08-Jul-2018

Safety Data Sheet
NUT PLUG* (All Grades)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name NUT PLUG* (All Grades)
Product code PID1146

Synonyms NUT PLUG* FINE, NUT PLUG* MEDIUM, NUT PLUG* COARSE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lost circulation material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

Contains
Cellulose

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Cellulose	Listed	Proprietary	60-100
Crystalline silica (impurity)	238-878-4	14808-60-7	<1

3.2 Mixtures

Not applicable

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Cellulose	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Cellulose	Not determined	10 mg/m³ TWA	Not determined
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Cellulose	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Cellulose	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154

Chemical Name	Thailand	Vietnam	Turkey
Cellulose	Not determined	10 mg/m³ TWA 5 mg/m³ TWA 20 mg/m³ STEL	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders
Use protective gloves made of: Neoprene Nitrile
Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Odor	Odorless
Color	Tan - Brown

Property	Values	Remarks
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	No information available	

Boiling point/range	No information available	
Flash point	193 °C / 380 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.1 - 1.4	@ 20 °C
Bulk density	577–641 kg/m³ / 36–40 lb/ft3	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cellulose	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae

See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Cellulose	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

No product level data available. See component information below.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies

Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08-Jul-2018
Revision date	18-Feb-2022
Version	8
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Do not handle until all safety precautions have been read and understood
Follow general hygiene considerations recognized as common good workplace practices

HMIS classification

Health	1*
Flammability	1
Physical hazard	0
PPE	E

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SDS no. 141381
Version 4
Revision date 28-Nov-2022
Supersedes Date: 26-Nov-2018

Safety Data Sheet
POLYPAC* (All Grades)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name POLYPAC* (All Grades)
Product code 141381

Synonyms POLYPAC* ELV, POLYPAC* R, POLYPAC* UL

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Fluid loss reducer. Viscosifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains
Polyanionic cellulose

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Polyanionic cellulose	Listed	Proprietary	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sodium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

Environmental exposure controls
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static

discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Polyanionic cellulose	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Polyanionic cellulose	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Polyanionic cellulose	10 mg/m^3 MAC	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Polyanionic cellulose	Not determined	Not determined	10 mg/m^3 MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Polyanionic cellulose	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Granules Powder
Odor	Odorless
Color	White

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	6.0 - 8.5	@ 1% solution
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.5 - 1.7	@ 25 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	

Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	Not determined
Density and/or Relative Density	No information available
Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Combustible material. Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polyanionic cellulose	= 27000 mg/kg (Rat)	No data available	> 5800 mg/m³ (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Polyanionic cellulose	No information available	No information available	No information available

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	26-Nov-2018
Revision date	28-Nov-2022
Version	4
This SDS has been revised in the	All sections No changes with regard to classification have been made.

following section(s)

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

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Safety Data Sheet

SDS no. PID1236

POLY-PLUS* DRY

Revision date 20-Dec-2023 **Supersedes Date:** 12-Nov-2018 **Version** 7

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name POLY-PLUS* DRY
Product code PID1236

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale stabilizer.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes extremely slippery when wet.

6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

Environmental exposure controls
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes extremely slippery when wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Strong bases Oxidizing agents
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use

	protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable
Respiratory protection	No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Granular
Appearance	Powder Dust
Color	White - Off-white
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	5 - 9	@ 5 g/l
Melting / freezing point	> 150 °C / 302 °F	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.25 - 1.40	20 °C
Bulk density	641-737 kg/m³ / 40-46 lb/ft³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 150 °C / 302 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Contact with strong bases liberates ammonia.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
Oxidizing agents may cause exothermic reactions.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong bases. Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

LD50 Oral	> 5000 mg/kg (rat) (Mixture)
LD50 Dermal	> 5000 mg/kg (rat) (Mixture)

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
IC50/Algae/72 hrs. : > 100 mg/L (OECD 201) (Mixture).

Toxicity to fish
LC50/Danio rerio and Fathead minnow/96 hrs. : > 100 mg/L (OECS 203) (Mixture).

Toxicity to daphnia and other aquatic invertebrates
EC50/Daphina/48 hrs. : > 100 mg/L (OECD 201) (Mixture).

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	12-Nov-2018
Revision date	20-Dec-2023
Version	7

This SDS has been revised in the following section(s) All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	E

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SDS no. PID17311
Version 6
Revision date 25-Mar-2021
Supersedes Date: 07-Apr-2016

Safety Data Sheet
POROSEAL*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name POROSEAL*
Product code PID17311
Country Limitations This SDS is not for use in the European Union (EU).

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Filtration-control. Shale stabilizer.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Skin sensitization	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H317 - May cause an allergic skin reaction

Precautionary statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves and eye/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P362 + P364 - Take off contaminated clothing and wash it before reuse

Contains
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	mixture	55965-84-9	< 0.005

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth

to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Hydrocarbon.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from freezing

Storage class Chemical storage.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits The product does not contain any hazardous materials with occupational exposure limits established.

Component Information

Chemical Name	Arabic	Australia	Egypt
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**

5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection — Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

Hand protection — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure — Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Slight
Color	Milky white

Property	**Values**	**Remarks**
pH	10	conc. sol.
pH @ dilution	No information available	
Melting / freezing point	0 °C / 32 °F	
Boiling point/range	100 °C / 212 °F	
Flash point	> 100 °C / > 212 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	17.5 mmHg	@ 20 °C
Relative Vapor Density	No information available	
Specific gravity	1.02	
Bulk density	No information available	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Protect from freezing.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	= 53 mg/kg (Rat)	No data available	= 1.23 mg/L (Rat) 4 h = 0.11 mg/L (Rat) 4 h

Sensitization May cause sensitization by skin contact.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Skin contact.

Routes of entry No route of entry noted.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish. LC50 (96 hrs): 16188 mg/l (estimated).

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates. EC50 (48 hrs): 7471 mg/l (estimated).

Toxicology data for the components

12.2 Persistence and degradability
Not readily biodegradable.

12.3 Bioaccumulative potential
No product level data available.

12.4 Mobility
Mobility
The product is miscible with water. May spread in water systems.

Mobility in soil
No information available.

12.5 Other adverse effects
None known.

12.6 Other information.
Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one
Schedule 6

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies
China (IECSC)	Does not comply
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Does not comply

This SDS is not for use in the European Union (EU).

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

Supersedes Date:	07-Apr-2016
Revision date	25-Mar-2021
Version	6
This SDS has been revised in the following section(s)	All sections There have been changes with regard to classification.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Follow general hygiene considerations recognized as common good workplace practices
Do not handle until all safety precautions have been read and understood

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	E

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SDS no. M117
Version 5
Revision date 17-Mar-2023
Supersedes Date: 20-Jun-2018

Safety Data Sheet
Potassium Chloride M117

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Potassium Chloride M117
Product code M117

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Clay control agent in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains No hazardous components
2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Chlorides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Strong oxidizing agents Strong acids Strong alkalies.
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline
Odor	Very faint
Color	White

Property	Values	Remarks
pH	No information available	
pH @ dilution	6 - 8	2% sol.
Melting / freezing point	No information available	
Boiling point/range	Not applicable	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	Not applicable	
Relative Vapor Density	No information available	
Specific gravity	1.984 - 1.989	@ 20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong alkalies.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not applicable

Group number Not applicable

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations

2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	20-Jun-2018
Revision date	17-Mar-2023
Version	5
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	E

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SDS no. PID1305
Version 3
Revision date 02-Sep-2022
Supersedes Date: 03-Aug-2017

Safety Data Sheet
POTASSIUM FORMATE BRINE

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name POTASSIUM FORMATE BRINE
Product code PID1305

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Clear-brine workover and completion fluid.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Potassium formate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Potassium formate	209-677-9	590-29-4	60-100

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Potassium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Nitric acid Hydrogen peroxide Sulfuric acid.

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Contains no substances with occupational exposure limit values

Component Information

Chemical Name	Arabic	Australia	Egypt
Potassium formate	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Potassium formate	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Potassium formate	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Potassium formate	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Potassium formate	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl rubber Break through time >480 minutes Glove thickness 0.7 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Odorless
Color	Clear

Property	**Values**	**Remarks**
pH	9-10	
pH @ dilution	8.5	@10%
Melting / freezing point	-15°C - -4°C / 5 - 24.8 °F	
Boiling point/range	135 - 153 °C / 275 -307.4 °F	
Flash point	> 100 °C / > 212 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	10 - 41 mmHg	@ 20 °C
Relative Vapor Density	No information available	
Specific gravity	1.01 - 1.58	@ 20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	

Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	13 cps	@ 25 °C
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents. Nitric acid. Hydrogen peroxide. Sulfuric acid.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium formate	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Potassium formate	LC50 > 1000 mg/l 96h Oncorhynchus mykiss ECHA data	EC50 1000 mg/l 96h freshwater algae ECHA data	EC50 > 100 mg/l 48h Daphnia magna EHCA data

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Potassium formate	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Potassium formate	No information available

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z. Proper Shipping Name: Potassium formate solution

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) with amendments.MARPOL 73/78; Marine Environmental Protection Committee (MEPC) Circulars.

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam

Supersedes Date:	03-Aug-2017
Revision date	02-Sep-2022
Version	3
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	0
Flammability	1
Physical hazard	0
PPE	E

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Safety Data Sheet

PTS-200*

Revision date 21-Mar-2024 **Supersedes Date:** 13-Mar-2019 **Version** 10

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name PTS-200*
Product code PID4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Temperature stabilizer.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Subcategory 1B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards

Acute aquatic toxicity	Category 3

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
2-aminoethanol

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
2-aminoethanol	205-483-3	141-43-5	60-100

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

Ingestion Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

Skin contact Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

4.2. Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use halon type extinguisher.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG 2X

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Prevent the formation of vapors, mists and aerosols. Do not breathe vapors or spray mist.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Avoid extreme temperatures Avoid contact with: Strong acids Strong oxidizing agents Nitrites Aluminum Copper Carbon steel

Storage class Corrosive storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
2-aminoethanol	6 ppm STEL 15 mg/m³ STEL 3 ppm TWA 7.5 mg/m³ TWA	6ppmSTEL 15mg/m³STEL 3ppmTWA 7.5mg/m³TWA	6 ppm STEL 15 mg/m³ STEL 3 ppm TWA 7.5 mg/m³ TWA
Chemical Name	**India**	**Indonesian**	**Japan**
2-aminoethanol	Not determined	3 ppm TWA 6 ppm STEL	3 ppm OEL 7.5 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
2-aminoethanol	0.5 mg/m³ MAC	6.0 mg/m³ TWA 3.0 ppm TWA 15.0 mg/m³ STEL 6.0 ppm STEL	6 ppm STEL 15 mg/m³ STEL 3 ppm TWA 7.5 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
2-aminoethanol	3 ppm TWA 7.5 mg/m³ TWA	3 ppm TWA 6 mg/m³ TWA	0.5 mg/m³ MAC Skin
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
2-aminoethanol	3 ppm TWA	8 mg/m³ TWA 15 mg/m³ STEL	3 ppm STEL 7.6 mg/m³ STEL Skin 1 ppm TWA 2.5 mg/m³ TWA

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Break through time >480 minutes Glove thickness 0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	Colorless
Odor	Slight Amine

Property	Values	Remarks
pH	11.5 - 12	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	171 °C / 340 °F	
Flash point	> 96 °C / > 205 °F	PMCC

Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	70 hPa	@ 20 °C
Relative Vapor Density	No information available	
Specific gravity	1.0 - 1.02	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Corrosive.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Not known.

10.4 Conditions to avoid

Avoid extreme temperatures. Keep away from direct sunlight.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Nitrites. Aluminum. Copper. Carbon steel.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Harmful by inhalation. Corrosive to the respiratory tract. May cause respiratory irritation. Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema. Vapours irritate the respiratory system, and may cause coughing and difficulties in breathing.

Eye contact Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Harmful in contact with skin. Causes severe skin burns. May be absorbed through the skin in harmful amounts.

Ingestion Harmful if swallowed. Can burn mouth, throat, and stomach.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-aminoethanol	1089 mg/kg (Rat)	2504 mg/kg (Rabbit)	1487 mg/m³ Vapour 4h (Rat)

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Skin contact. Eye contact. Ingestion.

Routes of entry Inhalation. Eye contact. Skin contact. Skin absorption. Ingestion.

Specific target organ toxicity - Single exposure Category 3

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Respiratory system.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2-aminoethanol	> 200 mg/L LC50 Oncorhynchus mykiss 96 h = 3684 mg/L LC50 Brachydanio rerio 96 h 300 - 1000 mg/L LC50 Lepomis macrochirus 96 h 114 - 196 mg/L LC50 Oncorhynchus mykiss 96 h = 227 mg/L LC50 Pimephales promelas 96 h	= 15 mg/L EC50 Desmodesmus subspicatus 72 h	= 65 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

Readily biodegradable. See component information below.

Chemical Name	Persistence and degradability
2-aminoethanol	Readily biodegradable

12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

Chemical Name	Bioaccumulation
2-aminoethanol	Does not bioaccumulate log Kow -1.91

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN2491
UN No. (IMDG/ANTAQ)	UN2491
UN No. (ICAO/ANAC)	UN2491

14.2. UN proper shipping name

Ethanolamine solution

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	8
IMDG/ANTAQ Hazard class	8
ICAO/ANAC Hazard class/division	8

14.4 Packing group

ADR/RID/ADN/ADG Packing group	III
IMDG/ANTAQ Packing group	III
ICAO/ANAC Packing group	III



14.5 Environmental hazard

No

14.6 Special precautions

Hazard identification no (ADR)	80
EmS (IMDG)	F-A, S-B
Emergency Action Code (EAC)	2X
Tunnel restriction code	(E)
Hazchem code ADG	2X

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-aminoethanol
Schedule 4
Schedule 6
Schedule 5

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2020
HSNO approval no.	HSR002491
Group number	6.1A, 8.2B, 6.9B, 9.1C

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	13-Mar-2019
Revision date	21-Mar-2024
Version	10
This SDS has been revised in the	All sections No changes with regard to classification have been made.

following section(s)

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3*
Flammability	1
Physical hazard	0
PPE	X

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SDS no. PID1361
Version 11
Revision date 10-May-2023
Supersedes Date: 09-Feb-2019

Safety Data Sheet
SAFE-CARB* (All Grades)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SAFE-CARB* (All Grades)
Product code PID1361

Synonyms SAFE-CARB* 2, 10, 20, 40, 140, 250, 500, 600, 750, 1400, 2500

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lost circulation material. Weighting agent. Bridging material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

Contains
Calcium carbonate

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Calcium carbonate	207-439-9	471-34-1	60-100
Crystalline silica (impurity)	238-878-4	14808-60-7	< 1

3.2 Mixtures

Not applicable

Comments
Naturally occuring mineral.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the

length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Calcium carbonate	Not determined	10mg/m³TWAinhalable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Calcium carbonate	Not determined	Not determined	Not determined
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Calcium carbonate	Not determined	Not determined	10 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Calcium carbonate	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154

Chemical Name	Thailand	Vietnam	Turkey
Calcium carbonate	Not determined	10 mg/m³ TWA	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against powders and dusts
Safety glasses with side-shields Tightly fitting safety goggles

Hand protection
Repeated or prolonged contact
Use protective gloves made of: Nitrile Neoprene
Frequent change is advisable

Respiratory protection
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odor	Odorless
Color	White

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	8.5 - 9.5	@ 100 g/l

Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	2.6 - 2.8	@ 20 °C
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	825 °C / 1517°F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Calcium carbonate	= 6450 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 3 mg/L (Rat) 4 h
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Respiratory system. Lungs.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Calcium carbonate	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Calcium carbonate	Not Applicable - Inorganic chemical.
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Calcium carbonate	Product/Substance is inorganic
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Calcium carbonate	Insoluble in water
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Calcium carbonate	Not expected to adsorb on soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required.
Group number	Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	09-Feb-2019
Revision date	10-May-2023
Version	11
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1*
Flammability	1
Physical hazard	0
PPE	E

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SDS no. PID1370
Version 13
Revision date 30-Aug-2022
Supersedes Date: 14-Nov-2019

Safety Data Sheet
SAFE-COR*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SAFE-COR*
Product code PID1370

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Corrosion inhibitor

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 1

Environmental hazards

Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H318 - Causes serious eye damage
H402 - Harmful to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	272-712-1	68909-77-3	30-60

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.
Eye Contact	Immediately flush eyes with water for 15 minutes while holding eyelids open. Remove contact lenses, if worn. Seek medical attention at once.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid frost. Store at room temperature Avoid contact with: Acids Nitrites

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Contains no substances with occupational exposure limit values
No biological limit allocated

Component Information

Chemical Name	Arabic	Australia	Egypt
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine	Not determined	Not determined	Not determined

derivs. residues			
Chemical Name	**India**	**Indonesian**	**Japan**
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Local exhaust ventilation

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene PVC Nitrile
Break through time >480 minutes
Glove thickness >= 0.7 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing and gloves, including the inside, before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Slight
Color	Dark amber

Property	**Values**	**Remarks**
pH	~ 10.5	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	> 100 °C / > 212 °F	
Flash point	151.6 °C / 305 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.10	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	4 cP	@ 25 °C
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	-12°C (<11°F)
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Store at room temperature. Avoid frost.

10.5 Incompatible materials

Acids. Do not add nitrites or other nitrosating agents to this product. May cause formation of nitrosamine.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Causes serious eye damage.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	5000 mg/kg (Rat)	>2000 mg/kg (Rat)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Eye contact.

Routes of entry Eye contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	OECD; Acute LC50; 96 hours Semi-static; Fish > 45 mg/L	OECD; Acute EC50; 72 hours; Algae; = 45 mg/L	OECD; Acute EC50; 48 hours Static, Daphnia; > 100 mg/L

12.2 Persistence and degradability

Not readily biodegradable.

Chemical Name	Persistence and degradability
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Not readily biodegradable

12.3 Bioaccumulative potential

No bioaccumulation expected due to high molecular weight.

Chemical Name	Bioaccumulation
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Does not bioaccumulate

12.4 Mobility

Mobility
The product is water soluble, and may spread in water systems.

Chemical Name	Mobility
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues	Soluble in water

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	8.3A, 9.1C

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	14-Nov-2019
Revision date	30-Aug-2022
Version	13
This SDS has been revised in the following section(s)	All sections There have been changes with regard to classification.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	1
Physical hazard	0
PPE	X

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SDS no. PID1387
Version 10
Revision date 04-Oct-2022
Supersedes Date: 24-Oct-2019

Safety Data Sheet
SAFE-SCAV* CA

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SAFE-SCAV* CA
Product code PID1387

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Oxygen Scavenger.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents Strong bases Metals
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Butyl Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Crystalline
Odor	Odorless
Color	White

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	5.5 - 8.0	@ 10%
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.65	20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties Suspended dust may present a dust explosion hazard
Oxidizing properties None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Metals. Strong bases. Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.

Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	24-Oct-2019
Revision date	04-Oct-2022
Version	10
This SDS has been revised in the following section(s)	1, 4, 7, 8, 11, 15, 16 No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

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Disclaimer

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SDS no. PID1392
Version 12
Revision date 25-Oct-2022
Supersedes Date: 14-Mar-2019

Safety Data Sheet
SAFE-SCAV* NA

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SAFE-SCAV* NA
Product code PID1392

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Oxygen Scavenger.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

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Contains
Sulphur Dioxide (Impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating and toxic gases and vapors

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Ammonium hydrogensulfite	233-469-7	10192-30-0	30-60
Sulphur Dioxide (Impurity)	231-195-2	7446-09-5	<1

Comments
The product contains other ingredients which do not contribute to the overall classification.
Sulfur dioxide is not present as a substance. It is formed during decomposition.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth

to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if irritation occurs.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Heating or fire can release toxic gas Sulphur oxides, Nitrogen oxides (NOx), Oxides of:, Ammonia, Amines.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. This product slowly releases sulphur dioxide in contact with air. Use only in well-ventilated areas. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep at 5-30°C Avoid contact with: Strong oxidizing agents Acids Alkalis

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Exposure limit noted is for decomposition product Sulfur dioxide.

Component Information

Chemical Name	Arabic	Australia	Egypt
Sulphur Dioxide (Impurity)	5 ppm STEL 13 mg/m³ STEL	5ppmSTEL 13mg/m³STEL	5 ppm STEL 13 mg/m³ STEL

	2 ppm TWA 5.2 mg/m³ TWA	2ppmTWA 5.2mg/m³TWA	2 ppm TWA 5.2 mg/m³ TWA
Chemical Name	**India**	**Indonesian**	**Japan**
Sulphur Dioxide (Impurity)	5 ppm STEL 10 mg/m³ STEL 2 ppm TWA 5 mg/m³ TWA	0.25 mg/m³ STEL	OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sulphur Dioxide (Impurity)	10 mg/m³ MAC	5.0 mg/m³ TWA 2.0 ppm TWA 13.0 mg/m³ STEL 5.0 ppm STEL	0.25 ppm STEL 0.66 mg/m³ STEL
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sulphur Dioxide (Impurity)	2 ppm TWA 5.2 mg/m³ TWA	5 ppm TWA 13 mg/m³ TWA	Skin notation 10 mg/m³ MAC Skin
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sulphur Dioxide (Impurity)	5 ppm TWA	5.0 mg/m³ TWA 10 mg/m³ STEL	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Chemical respirator with ammonia and amines cartridge (K/P2, green filter). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Pungent Sulfur
Color	Straw - Pale yellow

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	4.8 - 5-5	1% solution
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.24 - 1.39	@ 20 °C
Bulk density	No information available	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Contact with acids liberates very toxic gas.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep at temperatures between 5-30°C.

10.5 Incompatible materials

Strong oxidizing agents. Acids. Alkalis.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information Bisulfites may cause skin sensitization in sulfite sensitive persons. Bisulfites may also cause respiratory sensitization in asthmatics and sulfite sensitive persons.

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Causes serious eye irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulphur Dioxide (Impurity)	No data available	No data available	965 - 1168 ppm (Rat) 4 h

Sensitization Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Eye contact. Inhalation.

Routes of entry Eye contact. Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sulphur Dioxide (Impurity)	No information available	No information available	No information available

12.2 Persistence and degradability

See component information below.

12.3 Bioaccumulative potential

See component information below.

12.4 Mobility

Mobility
The product is miscible with water. May spread in water systems.

Mobility in soil
See component information below.

12.5 Other adverse effects

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Classified Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	6.4A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	14-Mar-2019
Revision date	25-Oct-2022
Version	12
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	E

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SDS no. PID1436
Version 3
Revision date 26-Sep-2022
Supersedes Date: 06-Jul-2017

Safety Data Sheet
SAPP

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SAPP
Product code PID1436

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use SAPP dispersant. Thinner.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

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Contains
Disodium dihydrogen diphosphate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Disodium dihydrogen diphosphate	231-835-0	7758-16-9	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye Contact Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Oxides of phosphorus.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Protect from moisture Avoid contact with: Acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Disodium dihydrogen diphosphate	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Disodium dihydrogen diphosphate	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Disodium dihydrogen diphosphate	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Disodium dihydrogen diphosphate	Not determined	Not determined	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Disodium dihydrogen diphosphate	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene PVC Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline Powder
Odor	Odorless
Color	White

Property	Values	Remarks
pH	No information available	
pH @ dilution	3.5 - 4.5	@ 1% sol.
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	

Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.8 - 1.9	20 °C
Bulk density	1000-1200 kg/m³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid excessive heat for prolonged periods of time.

10.5 Incompatible materials

Acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Eye contact Causes serious eye irritation.

Skin contact Prolonged skin contact may cause skin irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Disodium dihydrogen diphosphate	= 1800 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 0.58 mg/L (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Eye contact.

Routes of entry Eye contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Disodium dihydrogen diphosphate	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated

ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
HSNO approval no.	HSR002503
Group number	6.4A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	06-Jul-2017
Revision date	26-Sep-2022
Version	3
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	E

Disclaimer
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Section 1 - Identification

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Fax: 02 9416 8007
Emergency Contact (8am-5pm): 1800 251 306

Omya New Zealand Limited
Hangatiki East Road
Te Kuiti 3986 NEW ZEALAND
Phone: +64 78788260
Fax: +64 78787186
Emergency Contact 0800 822 802

Chemical nature: Calcium carbonate.

Trade Name: **Calcium Carbonate - Coarse Products**

This SDS applies to the following products:

6MM AGGREGATE, OMYACAL SUPERFINE, OMYACAL 12, OMYACAL 50, OMYACAL 250; OMYACARB 10, OMYACARB 20, OMYACARB 40, OMYACARB 50; CIRCAL Y, 60/16, and 1000; MARBLE CHIP 000, 00, 0, 1, 2, and 3; SELGRIT; ABGRIT; STONEDUST; Y GRADE; F70 SUPERFINE; WHITE POOL DUST.

Product Use: Used as an ingredient in a wide range of products.

Creation Date: **April, 2023**

This version issued: **May, 2023** and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

SUSMP Classification: None allocated.

ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated

GHS Signal word: NONE. Not hazardous.

HAZARD STATEMENT:

There appear to be no hazards associated with this product.

PREVENTION

P261: Avoid breathing dusts.
P262: Do not get in eyes, on skin, or on clothing.

RESPONSE

P335: Brush off loose particles from skin.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P370+P378: In case of fire: Use carbon dioxide, dry chemical, foam, water fog, to extinguish.

STORAGE

P410: Protect from sunlight.
P402+P404: Store in a dry place. Store in a closed container.
P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Statement of Hazardous Nature (New Zealand)

No group standard applies – product is non-hazardous.

DG Classification: Not a Dangerous Good for transport under the Land Transport Rule Dangerous Goods 2005 and NZS 5433:2007.

Emergency Overview

Physical Description & Colour: White powder.

Odour: Characteristic odour.

Section 3 – Composition and Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m^3)	STEL (mg/m^3)
Calcium carbonate	1317-65-3	>98	10	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Skin Contact: Gently brush away excess particles. Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.
Eye Contact: Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the particles are removed, while holding the eyelid(s) open. Obtain medical attention if irritation persists, or if particles are lodged in surface of the eye(s). Take special care if exposed person is wearing contact lenses.
Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting. Wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
No fire decomposition products are expected from this product at temperatures normally achieved in a fire.
Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam or water fog.
Fire Fighting: When fighting fires involving significant quantities of this product, no special equipment is believed to be necessary.

Section 6 - Accidental Release Measures

Accidental release: Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC and Nitrile. Eye/face protective equipment should comprise, as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask. Otherwise, not normally necessary.
Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.
Storage: Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	**TWA (mg/m^3)**	**STEL (mg/m^3)**
Calcium carbonate	10	not set

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when lengthy skin contact is likely.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC, nitrile.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	White powder.
Odour:	Characteristic odour.
Freezing/Melting Point:	Decomposes before melting.
Boiling Point:	Not applicable.
Flash point:	Does not burn.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Flammability Class:	Does not burn.
Volatiles:	No data.
Vapour Pressure:	No data.
Vapour Density:	Not applicable.
Specific Gravity:	2.3-2.8 at 20°C
Water Solubility:	14 mg/L at 20°C
pH:	8.5-9.5 (10% aqueous mixture at 20°C)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.
Coeff Oil/water Distribution:	No data
Particle Characteristics:	Powder.
Viscosity:	Not applicable.
Decomposition temp:	>800°C
Autoignition temp:	Not applicable - does not burn.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: None known.

Incompatibilities: No particular Incompatibilities.

Fire Decomposition: No significant quantities of decomposition products are expected at temperatures normally achieved in a fire.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs. Ingredients in this product have an established TWA, so exposure by inhalation should be avoided.

Major Health Hazards: no significant risk factors have been found for this product.

Classification of Hazardous Ingredients

Ingredient	Health Hazard Statement Codes

No ingredient mentioned in the HCIS Database is present in this product at hazardous concentrations.

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.
Long Term Exposure: Long term inhalation of high amounts of any nuisance dust may overload lung clearance mechanism. No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.
Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product is likely to be mechanically irritating. If exposure is minor or brief, no long term effects should result. However, if material is not removed promptly, scratches to surface of the eye may result with long term consequences.
Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is not harmful. This product is unlikely to cause any irritation problems in the short or long term.
Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

This product is unlikely to adversely effect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities. Expected to not be an environmental hazard.

Section 13 - Disposal Considerations

Disposal: Containers should be emptied as completely as practical before disposal. If possible, recycle product and containers either in-house or send to recycle company. If this is not practical, send to a commercial waste disposal site.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

Australia:
AIIC: All of the significant ingredients in this formulation are compliant with AICIS regulations.
New Zealand:
No group standard applies – product is not hazardous.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS/AIIC	Australian Inventory of Industrial Chemicals
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number

SAFETY DATA SHEET

Issued by: Omya Australia Pty Ltd Phone: 02 9416 6007
Issued by: Omya New Zealand Limited Phone: +64 78788260

Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)

Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

Australia:

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (July 2020) and GHS Revision 7

New Zealand

HSNO Approved Code of Practice: Preparation of Safety Data Sheets. New Zealand Chemical Industry Council September 2006.

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http://www.kilford.com.au/ Phone (02)8321 8866

Section 1 - Identification

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Phone: 02 9416 6007
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Emergency Contact (8am-5pm): 1800 251 306

Omya New Zealand Limited
Hangatiki East Road
Te Kuiti 3986 NEW ZEALAND
Phone: +64 78788260
Fax: +64 78787186
Emergency Contact 0800 822 802

Chemical nature: Calcium carbonate. Contains respirable silica as a minor component.

Trade Name: **Calcium Carbonate - Fine Products**

This SDS applies to the following products:

OMYACARB 1, OMYACARB 2, OMYACARB 5,OMYACARB 1T, OMYACARB 2T, MICROFINE, HYDROCARB 60, HYDROCARB 57, HYDROCARB 90.

Product Use: Used as an ingredient in a wide variety of products.

Creation Date: **April, 2023**

This version issued: **May, 2023** and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

SUSMP Classification: None allocated.

ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated



GHS Signal word: DANGER

Carcinogenicity Category 1

HAZARD STATEMENT:

H350i: May cause cancer by inhalation.

PREVENTION

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dusts.
P262: Do not get in eyes, on skin, or on clothing.
P284: Wear respiratory protection.

RESPONSE

P335: Brush off loose particles from skin.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P308+P313: If exposed or concerned: Get medical advice.
P370+P378: In case of fire: Use carbon dioxide, dry chemical, foam, water fog, to extinguish.

STORAGE

P410: Protect from sunlight.
P402+P404: Store in a dry place. Store in a closed container.
P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Statement of Hazardous Nature (New Zealand)

Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020 – HSR002512

DG Classification: Not a Dangerous Good for transport under the Land Transport Rule Dangerous Goods 2005 and NZS 5433:2007.

Emergency Overview

Physical Description & Colour: White powder.
Odour: Characteristic odour.

Section 3 – Composition and Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m^3)	STEL (mg/m^3)
Calcium carbonate	1317-65-3	>98	10	not set
Silica	14808-60-7	0.1-1.0	0.05	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Skin Contact: Gently brush away excess particles. Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.
Eye Contact: Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the particles are removed, while holding the eyelid(s) open. Obtain medical attention if irritation persists, or if particles are lodged in surface of the eye(s). Take special care if exposed person is wearing contact lenses.
Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting. Wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
No fire decomposition products are expected from this product at temperatures normally achieved in a fire.
Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam or water fog.
Fire Fighting: When fighting fires involving significant quantities of this product, no special equipment is believed to be necessary.

Section 6 - Accidental Release Measures

Accidental release: Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC and Nitrile. Eye/face protective equipment should comprise, as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask. Use a P1 mask, designed for use against mechanically generated particles e.g. silica & asbestos.
Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed.

The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10. Take special care if handling this product over extended periods as it is a cumulative poison.

Storage: Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	**TWA (mg/m^3)**	**STEL (mg/m^3)**
Calcium carbonate	10	not set
Silica	0.05	not set

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when lengthy skin contact is likely.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC, nitrile.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask. Use a P1 mask, designed for use against mechanically generated particles e.g. silica & asbestos.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	White powder.
Odour:	Characteristic odour.
Freezing/Melting Point:	Decomposes before melting.
Boiling Point:	Not applicable.
Flash point:	Does not burn.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Flammability Class:	Does not burn.
Volatiles:	No data.
Vapour Pressure:	Negligible at normal ambient temperatures.
Vapour Density:	Not applicable.
Specific Gravity:	2.3-2.8 at 20°C
Water Solubility:	14 mg/L at 20°C
pH:	8.5-9.5 (10% aqueous mixture at 20°C)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.
Coeff Oil/water Distribution:	No data
Particle Characteristics:	Powder. Reported to contain 0.1-1.0% respirable silica.
Viscosity:	Not applicable.
Decomposition temp:	>800°C
Autoignition temp:	Not applicable - does not burn.

Section 10 - Stability and Reactivity

Reactivity: In the presence of hydrofluoric acid, this product may release silicon tetrafluoride.

Conditions to Avoid: None known.

Incompatibilities: hydrofluoric acid .

Fire Decomposition: No significant quantities of decomposition products are expected at temperatures normally achieved in a fire. Silicon compounds.
Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:
Target Organs: There is no data to hand indicating any particular target organs. Ingredients in this product have an established TWA, so exposure by inhalation should be avoided.

Major Health Hazards: may cause cancer by inhalation. This product is a cumulative poison. Minor exposures over a period of time may lead to serious health problems.

Classification of Hazardous Ingredients

Ingredient	Health Hazard Statement Codes
Silica	H350i, H372

- Carcinogenicity – category 1A
- Specific target organ toxicity (repeated exposure) – category 1

Potential Health Effects

Inhalation:
Short Term Exposure: Product is unlikely to cause any discomfort or irritation.
Long Term Exposure: Long term inhalation of high amounts of any nuisance dust may overload lung clearance mechanism. A commonly known health hazard which has been associated historically with the inhalation of silica-containing dusts is silicosis. Silicosis is a fibrotic lung disease (development of scar tissue in the lungs) which can be progressive and disabling; it can lead to death. It is the primary health risk from breathing silica and the oldest known occupational disease.
To pose a danger to the lungs, a dust particle must be respirable. A dust particle is considered respirable if it is smaller than 10 micrometers. Dust particles that are respirable are capable of being inhaled into the conducting airways and gas exchange regions of the lungs. Dust particles larger than 10 micrometers are not capable of penetrating the defence mechanisms of the lung to produce injury to the important lower regions of the lung where oxygen transfer takes place.
There are three different types of silicosis. Chronic silicosis may result from prolonged inhalation of excessive levels of respirable silica dust, and may take many years of exposure to develop. A second type, accelerated silicosis, may occur in a relatively shorter period of time from the inhalation of intense excessive levels of respirable silica dust. Acute silicosis, the third type, develops rapidly and has been reported in occupations such as sand blasting and drilling through silica-containing rock. Cases of acute silicosis and complicated cases of chronic silicosis and accelerated silicosis can be fatal.
NIOSH has a series of publications on silica and silicosis in the workplace, which may be found at http://www.cdc.gov/niosh/topics/silica/default.htmlBelieved to be cumulative by inhalation route.

Skin Contact:
Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.
Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:
Short Term Exposure: This product is likely to be mechanically irritating. If exposure is minor or brief, no long term effects should result. However, if material is not removed promptly, scratches to surface of the eye may result with long term consequences.
Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:
Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is not harmful. This product is unlikely to cause any irritation problems in the short or long term.
Long Term Exposure: Long term minor exposures to this product may cause serious health effects.

Carcinogen Status:
SWA: Silica is classified by SWA as a Category 1a Carcinogen
See the SWA website for further details. A web address has not been provided as addresses frequently change.
NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: Silica is classed 1 by IARC - carcinogenic to humans.
See the IARC website for further details. A web address has not been provided as addresses frequently change.

Section 12 - Ecological Information

This product is unlikely to adversely effect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities. Expected to not be an environmental hazard.

Section 13 - Disposal Considerations

Disposal: Containers should be emptied as completely as practical before disposal. If possible, recycle product and containers either in-house or send to recycle company. If this is not practical, send to a commercial waste disposal site.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

Australia:
AIIC: All of the significant ingredients in this formulation are compliant with AICIS regulations.
New Zealand:
Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020 – HSR002512

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS/AIIC	Australian Inventory of Industrial Chemicals
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

Australia:

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (July 2020) and GHS Revision 7

New Zealand

HSNO Approved Code of Practice: Preparation of Safety Data Sheets. New Zealand Chemical Industry Council September 2006.

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http://www.kilford.com.au/ Phone (02)8321 8866

SDS no. M003
Version 6
Revision date 05-May-2022
Supersedes Date: 18-Sep-2018

Safety Data Sheet
Soda Ash M3

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Soda Ash M3
Product code M003

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Buffer in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 2A

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
WARNING

Hazard Statements
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

–

Contains
Sodium carbonate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Sodium carbonate	207-838-8	497-19-8	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

Eye Contact Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids.

Continue to rinse for at least 15 minutes. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sodium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid dust formation.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with water and moist air - product is hygroscopic. Store away from incompatibles, Powdered aluminum Strong acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Sodium carbonate	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Sodium carbonate	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sodium carbonate	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sodium carbonate	Not determined	Not determined	Skin notation 2 mg/m^3 MAC

			Skin
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sodium carbonate	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Nitrile rubber Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odor	Odorless
Color	White

Property	**Values**	**Remarks**
pH	11	
pH @ dilution	No information available	
Melting / freezing point	851 °C / 1564 °F	
Boiling point/range	Not applicable	

Flash point	Not applicable	
Evaporation rate (BuAc =1)	Not applicable	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	Not applicable	
Relative Vapor Density	Not applicable	
Specific gravity	2.5	@20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	>400◦C/ 752◦F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Decomposes by reaction with strong acids.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid contact with water and moist air - product is hygroscopic.

10.5 Incompatible materials

Powdered aluminum. Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Eye contact Causes serious eye irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium carbonate	= 4090 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 2300 mg/m³ (Rat) 2 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Eye contact. Inhalation.

Routes of entry Eye contact. Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Large amounts will affect pH and harm aquatic organisms
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium carbonate	310 - 1220 mg/L LC50 Pimephales promelas 96 h = 300 mg/L LC50 Lepomis macrochirus 96 h	No information available	= 265 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated

IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Sodium carbonate
Schedule 6
Schedule 5

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	18-Sep-2018
Revision date	05-May-2022
Version	6
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	2
Flammability	0
Physical hazard	0
PPE	E

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The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.
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Safety Data Sheet

SODIUM BICARBONATE

Revision date 07-Apr-2023 **Supersedes Date:** 08-Oct-2018 **Version** 10

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SODIUM BICARBONATE
Product code PID1483

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Commercial chemical

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains
Sodium hydrogen carbonate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Sodium hydrogen carbonate	205-633-8	144-55-8	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Strong acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Component Information

Chemical Name	**Arabic**	**Australia**	**Egypt**
Sodium hydrogen carbonate	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Sodium hydrogen carbonate	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sodium hydrogen carbonate	5 mg/m^3 MAC	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sodium hydrogen carbonate	Not determined	Not determined	5 mg/m^3 MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sodium hydrogen carbonate	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Local exhaust ventilation

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: PVC Frequent change is advisable
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Color	White
Odor	Odorless

Property	**Values**	**Remarks**
pH	Not applicable	
pH @ dilution	8.6	@ 5% solution
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	0.98 - 1.3	20 °C
Bulk density	500 - 1300 kg/m³	
Water solubility	Soluble in water	

Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	No information available
Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydrogen carbonate	= 4220 mg/kg (Rat)	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates

Sodium hydrogen carbonate	8250 - 9000 mg/L LC50 Lepomis macrochirus 96 h	No information available	= 2350 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Sodium hydrogen carbonate
Schedule 6
Schedule 5

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam

Supersedes Date: 08-Oct-2018

Revision date	07-Apr-2023
Version	10
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

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Safety Data Sheet
SODIUM CHLORIDE BRINE

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SODIUM CHLORIDE BRINE
Product code PID1103

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Weighting agent. Completion brine.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Sodium Chloride

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Sodium Chloride	231-598-3	7647-14-5	30-60

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Oxides of:, Sodium, Chlorides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Contains no substances with occupational exposure limit values

Component Information

Chemical Name	Arabic	Australia	Egypt
Sodium Chloride	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Sodium Chloride	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sodium Chloride	5 mg/m³ MAC	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sodium Chloride	Not determined	Not determined	5 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sodium Chloride	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl rubber PVC Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Color	Colorless
Odor	Odorless

Property	**Values**	**Remarks**
pH	8.5	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	106 °C / 222.8 °F	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	

Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	No information available
Density and/or Relative Density	1.008 - 1.200 g/cm³ @ 20 °C
Explosive properties	Not applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium Chloride	= 3 g/kg (Rat)	> 10000 mg/kg (Rabbit)	> 42 mg/L (Rat) 1 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure None known.

Routes of entry No route of entry noted.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium Chloride	= 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h	No information available	= 1000 mg/L EC50 Daphnia magna 48 h 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h

	6020 - 7070 mg/L LC50 Pimephales promelas 96 h		

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Sodium Chloride	Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Sodium Chloride	Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Sodium Chloride	Soluble in water

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated

ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z.
Proper Shipping Name: Drilling brines, including: calcium bromide solution, calcium chloride solution and sodium chloride solution.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code
Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) with amendments.MARPOL 73/78; Marine Environmental Protection Committee (MEPC) Circulars.

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies

New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supersedes Date:	04-Aug-2020
Revision date	26-Jul-2023
Version	7
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	B

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Safety Data Sheet

SODIUM FORMATE BRINE

Revision date 18/Jul/2025 **Supersedes Date:** 18/Jun/2020 **Version** 4

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SODIUM FORMATE BRINE
Product code PID1505

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Weighting agent. Completion brine.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger
No.1, Benoi Crescent
Singapore 629986
Phone: +62 21 50805455

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China 400 120 6011, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA +1 866 928 0789

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Contains
Sodium formate

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Sodium formate	205-488-0	141-53-7	60-100

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye Contact Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sodium.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

Component Information

Chemical Name	Arabic	Australia	Egypt
Sodium formate	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Sodium formate	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Sodium formate	10 mg/m³ MAC	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Sodium formate	Not determined	Not determined	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Sodium formate	Not determined	Not determined	Not determined

Notes

No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC Break through time >480 minutes Glove thickness >=0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Provide eyewash station.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Color	Clear
Odor	Odorless

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	8.6	@ 10 % solution
Melting / freezing point	No information available	

Boiling point/range	No information available	
Flash point	Does not flash	
Evaporation rate	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	0.99 - 1.318	@ 20 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	29 cP (40 wt% solution)	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Strong acids. Formic acid may be formed.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium formate	= 11200 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 0.67 mg/L (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not Applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium formate	No information available	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong
Supersedes Date:	18/Jun/2020
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Version	4
This SDS has been revised in the following section(s)	All sections. No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

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Soltex® Additive

Version 5.4 Revision Date 2025-01-28

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : Soltex® Additive
Material : 1126278, 1016807

Use : Drilling Mud Additive

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Local : Chevron Phillips Chemicals Australia Pty Ltd
Level 8
Chadstone Tower 1
1341 Dandenong Road, Chadstone, VIC
Australia 3148
Hours of Operation: 9:00 a.m. - 5:00 p.m.

SDS Requests: 61 3 9964 5355
Technical Information: 61 3 9964 5355
Responsible Party: Product Safety Group
Email:sds@cpchem.com

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
61 3 9964 5355 (Australia)

Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402

Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico "Agostino Gemelli", Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726;POISON CENTER ROME – Policlinico "Umberto I" Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera "Antonio Cardarelli" Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera "Papa Giovanni XXIII" Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;
Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052
Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
Model Work Health and Safety Regulations 2011, Model Code of Practice for the Labelling of Workplace Hazardous Chemicals (2011), Guidance on the Classification of Hazardous Chemicals under the WHS Regulations (2012) (GHS 2009)

Classification

: Carcinogenicity, Category 1A, Inhalation

Labeling

Symbol(s) :



Signal Word : Danger

Hazard Statements : H350: May cause cancer by inhalation.

Precautionary Statements : **Prevention:**
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
Response:
P308 + P313: IF exposed or concerned: Get medical advice/ attention.
Storage:
P405: Store locked up.
Disposal:
P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

Synonyms : Drilling Mud Additive

Molecular formula : Mixture

Chemical name	CAS-No. / EINECS-No.	Concentration [wt%]
Crystalline Silica	14808-60-7	0.1 - 2.5

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Induce vomiting immediately and call a physician. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	Not applicable
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Avoid dust formation. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.
Hazardous decomposition products	:	Carbon oxides. Sulfur oxides.

SECTION 6: Accidental release measures

Personal precautions	:	Use personal protective equipment. Avoid dust formation. Avoid breathing dust.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.
Additional advice	:	Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	Avoid formation of respirable particles. Do not breathe vapors/dust. Avoid exposure - obtain special instructions

before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient.

Advice on protection against fire and explosion : Avoid dust formation. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Use : Drilling Mud Additive

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

AU

Components	Basis	Value	Control parameters	Note
Crystalline Silica	AU OEL	TWA	0.05 mg/m3	Carc. 1A, (respirable dust)

Carc. 1A Category 1A (Carc. 1A) Known to have carcinogenic potential for humans

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed

with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection	:	Eye wash bottle with pure water. Safety glasses.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Powder
Physical state	:	solid
Color	:	Black
Odor	:	no odor
Odor Threshold	:	Not applicable

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	No
Autoignition temperature	:	Not applicable
Molecular formula	:	Mixture
Molecular weight	:	No data available
pH	:	7 - 10
Pour point	:	Not applicable
Boiling point/boiling range	:	Not applicable
Vapor pressure	:	Not applicable
Relative density	:	Not applicable
Density	:	1.54 g/cm3

Water solubility	:	partly soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	Not applicable
Relative vapor density	:	Not applicable
Evaporation rate	:	Not applicable

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Hazardous reactions: Hazardous polymerization does not occur.

Further information: No decomposition if stored and applied as directed.

Conditions to avoid : Generation of Dusts.

Materials to avoid : No data available.

Hazardous decomposition products : Carbon oxides
Sulfur oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

CMR effects

Crystalline Silica : Carcinogenicity: Human carcinogen.

Soltex® Additive
Further information : Chronic Health Hazard.

SECTION 12: Ecological information

Ecotoxicity effects

Biodegradability	:	This material is not expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation	:	No data available
Mobility	:	No data available
Additional ecological information	:	This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.
Long-term (chronic) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product	:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

Therapeutic Goods (Poisons Standard) Instrument : No poison schedule number allocated

Notification status

Europe REACH	:	A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	All substances listed as active on the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Other AICS	:	All substances are listed on AIIC. Obligations to provide information to AICIS apply.
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has

themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).

China IECSC : Not in compliance with the inventory
Taiwan TCSI : Not in compliance with the inventory

SECTION 16: Other information

Further information

Legacy SDS Number : 59370

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and

			Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

Safety Data Sheet
SP-101*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name SP-101*
Product code PID1524

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Fluid loss reducer.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents Strong acids
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m^3 Respirable Dust, 10mg/m^3 Total Dust.

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene PVC Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection

with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Granules Dust
Odor	Slight
Color	Off-white - Cream

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	7	@1%
Melting / freezing point	> 150 °C / > 302 °F	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	0.7 - 0.8	
Bulk density	392 kg/m^3 / 24.5 lb/ft3	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 150° / 302°F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	<0	
Density and/or Relative Density	No information available	

Explosive properties Suspended dust may present a dust explosion hazard
Oxidizing properties None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available

VOC content(%) None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Combustible material.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
Oxidizing agents may cause exothermic reactions.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

LD50 Oral	> 5000 mg/kg (rat) estimated (MIXTURE)
LD50 Dermal	> 5000 mg/kg (rat) estimated (MIXTURE)

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

log Pow
<0

12.4 Mobility

Mobility
Soluble in water.

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required

Group number Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Does not comply

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

Supersedes Date: 18-Jun-2018

Revision date 13-Dec-2022

Version 7

This SDS has been revised in the following section(s) All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Do not handle until all safety precautions have been read and understood Follow general hygiene considerations recognized as common good workplace practices

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

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SDS no. PID11833
Version 8
Revision date 20-Jan-2023
Supersedes Date: 22-Oct-2019

Safety Data Sheet
STARGLIDE*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name STARGLIDE*
Product code PID11833

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lubricant

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Serious eye damage/eye irritation	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements
H318 - Causes serious eye damage

Precautionary statements
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

_

Contains
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	500-012-0	9004-77-7	30-60

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. If conscious, drink plenty of water. Seek medical attention if irritation occurs.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands before eating, drinking or smoking Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	Arabic	Australia	Egypt
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Not determined	Not determined	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Not determined	Not determined	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Not determined	Not determined	Not determined
Chemical Name	**Malaysia**	**Philippines**	**Russia**

Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Not determined	Not determined	Not determined
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Not determined	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection
Use eye protection according to EN 166, designed to protect against liquid splashes Wear chemical splash goggles and face shield

Hand protection
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure
Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Slight
Color	Yellow

Property	Values	Remarks
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	< -10 °C / 14 °F	
Boiling point/range	No information available	
Flash point	> 100 °C / > 212 °F	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	0.93 - 0.97	@ 20 °C
Bulk density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	20-60 cPs	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Not applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Causes serious eye damage.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	2630 mg/kg (Rat)	3540 mg/kg bw (Rabbit)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation. Eye contact.

Routes of entry Inhalation. Eye contact.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae

See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	LC50 >1800 mg/l, 96h Scophthalmus maximus OECD 203	EC50: 2490 mg/l, 72h Selenastrum capricornutum OECD 201	EC50 >3200 mg/l, 48h Daphnia magna OECD 202

12.2 Persistence and degradability

Product is biodegradable. See component information below.

Chemical Name	Persistence and degradability
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	OECD 301D 76%

12.3 Bioaccumulative potential

The product contains potentially bioaccumulating substances. See component information below.

Chemical Name	Bioaccumulation
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	log Kow 0.44@20°C

12.4 Mobility

Mobility
Insoluble in water. See component information below.

Chemical Name	Mobility
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Soluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard 2020

HSNO approval no. HSR002606

Group number 8.3A

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Does not comply

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	22-Oct-2019
Revision date	20-Jan-2023
Version	8
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	3
Flammability	1
Physical hazard	0
PPE	X

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Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the

maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.
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SAFETY DATA SHEET
TRIETHANOLAMINE COMMERCIAL
REVISION 6, DATE 06 JUL 2023

1. IDENTIFICATION

Product Name	**Triethanolamine Commercial**
Other Names	TEA 85; Triethanolamine 85%
Uses	Chemical intermediate; Chemical additive. Surfactants raw material. Restrictions on use: No information available.
Chemical Family	No Data Available
Chemical Formula	C6H15NO3
Chemical Name	Contains: Triethanolamine; Diethanolamine
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Schedule 5

Globally Harmonised System

Hazard Classification			Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories			Skin Corrosion/Irritation - Category 2 Specific Target Organ Toxicity (Single Exposure) - Category 3 Serious Eye Damage/Irritation - Category 2
Pictograms			
Signal Word			Warning
Hazard Statements		**H315**	Causes skin irritation.
		H319	Causes serious eye irritation.
		H335	May cause respiratory irritation.
		H336	May cause drowsiness or dizziness.
Precautionary Statements	Prevention	**P280**	Wear protective gloves/protective clothing/eye protection/face protection.
		P261	Avoid breathing mist/vapours/spray.
		P264	Wash exposed skin thoroughly after handling.
		P271	Use only outdoors or in a well-ventilated area.
	Response	**P302 + P352**	IF ON SKIN: Wash with plenty of water.
		P337 + P313	If eye irritation persists: Get medical advice.
		P312	Call a POISON CENTER or doctor if you feel unwell.
		P321	Specific treatment (see First Aid Measures on Safety Data Sheet).
		P332 + P313	If skin irritation occurs: Get medical advice.
		P362	Take off contaminated clothing.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
	Storage	**P403 + P233**	Store in a well-ventilated place. Keep container tightly closed.
		P405	Store locked up.
	Disposal	**P501**	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Triethanolamine	C6H15NO3	102-71-6	85 - 89 %
Diethanolamine	C4H11NO2	111-42-2	11 - 15 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed
IF SWALLOWED: Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. Get medical advice/attention.

Eye
IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Immediately call a Poison Centre or doctor/physician for advice. Obtain medical attention without delay, preferably from an ophthalmologist.
*Suitable emergency eye wash facility should be immediately available.

Skin
IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Wash skin and hair with plenty of soap and running water/shower. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.
*If burn is present, treat as any thermal burn, after decontamination.
*Suitable emergency safety shower facility should be immediately available.

Inhaled
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.

Advice to Doctor
No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.
* Most important symptoms and effects, both acute and delayed: No information available.
* Indication of any immediate medical attention and special treatment needed: No information available.

Medical Conditions Aggravated by Exposure
No information available.

5. FIRE FIGHTING MEASURES

General Measures
Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Flammability Conditions
Product is a combustible liquid; May burn but does not ignite readily.

Extinguishing Media
Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Burning liquids may be extinguished by dilution with water. Do not use direct water-stream - May spread fire.
*Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire and Explosion Hazard
Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Products of Combustion
During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include Nitrogen oxides, Carbon monoxide, Carbon dioxide.

Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.
Flash Point	>150 °C [Closed cup]
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Do not breathe vapours and avoid contact with eyes, skin and clothing.
Clean Up Procedures	Absorb with earth, sand or other non-combustible material and transfer to suitable container for disposal (see SECTION 13). *Large spills: Pump into suitable and properly labelled containers.
Containment	Contain spilled material if possible. Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	No information available.
Environmental Precautionary Measures	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unnecessary and unprotected personnel from entering the area.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Do not breathe mist/vapours/spray and avoid contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid release to the environment.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Avoid freezing - Thaw and mix well before using. Keep container tightly closed. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10). Store in accordance with regulations for storage of combustible liquids. *Storage stability: 24 Month (Steel drums); 6 Month (Bulk).
Container	Keep in the original container or store in Stainless steel. Do not store in Galvanized steel, Copper, Copper alloys, Zinc.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Triethanolamine (CAS No. 102-71-6): - Safe Work Australia Exposure Standard: TWA = 5 mg/m3; Respiratory and/or skin sensitiser (Sen). - New Zealand Workplace Exposure Standard: TWA = 5 mg/m3. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Safe Work Australia Exposure Standard: TWA = 3 ppm (13 mg/m3). - New Zealand Workplace Exposure Standard: TWA = 3 ppm (13 mg/m3); Skin absorption (skin).
Exposure Limits	No Data Available
	No information available.

Biological Limits	
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines, when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. Recommended: For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator Organic vapour cartridge with a particulate pre-filter (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Use chemical goggles. - Hand protection: Wear protective gloves. Recommended: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur, e.g. Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol laminate (EVAL). Avoid gloves made of Polyvinyl alcohol (PVA). The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier. - Skin/body protection: Wear appropriate personal protective clothing to prevent skin contact. Recommended: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.
Special Hazards Precaustions	Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed!
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colourless to light yellow liquid with mild ammonia odour; mixes with water.
Odour	Ammoniacal
Colour	Colourless to yellow
pH	No Data Available
Vapour Pressure	<0.01 mmHg [Literature] (@ 20 °C)
Relative Vapour Density	4.9 Air = 1
Boiling Point	310.3 °C [Estimated]
Melting Point	No Data Available
Freezing Point	15.8 °C
Solubility	Completely miscible with water 20°C [Literature]
Specific Gravity	1.126 (Water = 1)
Flash Point	>150 °C [Closed cup]
Auto Ignition Temp	No Data Available
Evaporation Rate	<0.01 (Butyl Acetate = 1)
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available

Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Properties That May Initiate or Contribute to Fire Intensity	Product is a combustible liquid; May burn but does not ignite readily. *Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.
Reactions That Release Gases or Vapours	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include Nitrogen oxides, Carbon monoxide, Carbon dioxide.
Release of Invisible Flammable Vapours and Gases	Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas.

10. STABILITY AND REACTIVITY

General Information	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases. Corrosive when wet!
Chemical Stability	Stable under recommended storage conditions.
Conditions to Avoid	Avoid exposure to elevated temperatures. Avoid moisture.
Materials to Avoid	Avoid contact with Nitrites, Strong acids, Strong oxidizers. Avoid unintended contact with Halogenated hydrocarbons.
Hazardous Decomposition Products	Decomposition products depend upon temperature, air supply and the presence of other materials. Combustion products may include Nitrogen oxides, Carbon monoxide, Carbon dioxide.
Hazardous Polymerisation	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Prolonged skin contact is unlikely to result in absorption of harmful amounts. - Skin corrosion/irritation: Causes skin irritation. Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling and tissue damage. May cause more severe response if skin is abraded (Diethanolamine). - Eye damage/irritation: Causes serious eye damage. May cause severe eye irritation. May cause severe corneal injury (Diethanolamine). - Respiratory/skin sensitisation: Skin contact may cause an allergic skin reaction in a small proportion of individuals. Did not cause allergic skin reactions when tested in guinea pigs (Triethanolamine/Diethanolamine). - Germ cell mutagenicity: In vitro genetic toxicity studies were negative (Triethanolamine/Diethanolamine). Animal genetic toxicity studies were negative (Diethanolamine). - Carcinogenicity: Findings from a chronic skin painting study by NTP include liver tumors in mice. Mechanistic studies indicate that tumor formation is of questionable relevance to humans. Findings from a chronic diethanolamine skin

painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans. A number of factors may have influenced the results and are being considered in their interpretation.
- Reproductive toxicity: Repeated excessive exposures to high amounts may cause effects on testes and fertility in males. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals (Diethanolamine). Has been toxic to the fetus in laboratory animals at doses toxic to the mother. However, the relevance of this to humans is unknown. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use (Triethanolamine).
- STOT (single exposure): Evaluation of available data suggests that this material is not an STOT-SE toxicant. At room temperature, exposure to vapour is minimal due to low volatility. Vapour from heated material may cause respiratory irritation and other effects.
- STOT (repeated exposure): May cause damage to organs (Kidneys, Liver, Blood, Nervous system) through prolonged or repeated exposure if swallowed. Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high doses of diethanolamine given.
- Aspiration toxicity: Based on physical properties, not likely to be an aspiration hazard (Triethanolamine/Diethanolamine).
Information on likely routes of exposure:
- Ingestion: Causes irritation.
- Eye contact: Causes irritation.
- Skin contact: Causes irritation.
- Inhalation: May cause allergic reaction.
Chronic effects: Repeated exposure will aggravate acute symptoms.

Acute

Ingestion

Acute toxicity (Oral):
- LD50, Rat: >4,000 mg/kg [For similar material(s)].
COMPONENT: Triethanolamine:
- LD50, Rat: 6,400 mg/kg
- LD50; Rabbit: 2200 mg/kg
COMPONENT: Diethanolamine:
- LD50, Rat (male/female): 1,600 mg/kg [OECD 401 or equivalent].

Other

Acute toxicity (Dermal):
- LD50, Rabbit: >2,000 mg/kg [Based on information for component(s)].
COMPONENT: Triethanolamine:
- LD50, Rabbit: >2,000 mg/kg (No deaths occurred at this concentration).
- LD50: Rat: >16000 mg/kg
COMPONENT: Diethanolamine:
- LD50, Rabbit (male): 8,200 mg/kg

Inhalation

Acute toxicity (Inhalation):
COMPONENT: Triethanolamine:
- Based on the available data, respiratory irritation was not observed. No deaths occurred following exposure to a saturated atmosphere.
COMPONENT: Diethanolamine:
- LC0, Rat (male): 3.35 mg/l (4 h) Aerosol.

Carcinogen Category

None

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic toxicity:
COMPONENT: Triethanolamine (CAS No. 102-71-6):
- Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
- May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.
COMPONENT: Diethanolamine (CAS No. 111-42-2):
- Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
- May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Persistence/Degradability

COMPONENT: Triethanolamine (CAS No. 102-71-6):
- Material is readily biodegradable.

	- 10-day Window: Pass - Biodegradation: 97 % (28 d) [OECD Test Guideline 301A or Equivalent]; 98 % (14 d) [OECD Test Guideline 302B or Equivalent]. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Material is readily biodegradable. - 10-day Window: Pass - Biodegradation: 93 % (28 d) [OECD Test Guideline 301F or Equivalent].
Mobility	COMPONENT: Triethanolamine (CAS No. 102-71-6): - Potential for mobility in soil is very high (Koc between 0 and 50). - Partition coefficient (Koc): 10 [Estimated]. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Potential for mobility in soil is very high (Koc between 0 and 50). - Partition coefficient (Koc): 1 [Estimated]. - Volatilisation from natural bodies of water or moist soil is not expected to be an important fate process.
Environmental Fate	Harmful to aquatic life - Do not dump into any sewers, on the ground or into any body of water.
Bioaccumulation Potential	COMPONENT: Triethanolamine (CAS No. 102-71-6): - Bioconcentration potential is low (BCF < 100 or Log Pow < 3). - Partition coefficient: n-octanol/water(log Pow): -2.3 at 25 °C [Measured]. - Bioconcentration factor (BCF): < 3.9 Cyprinus carpio (42 d) [Measured]. COMPONENT: Diethanolamine (CAS No. 111-42-2): - Bioconcentration potential is low (BCF < 100 or Log Pow < 3). - Partition coefficient: n-octanol/water(log Pow): -2.18 at 25 °C [OECD Test Guideline 107 or Equivalent].
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	All disposal practices must be in compliance with all federal, state/provincial and local laws and regulations. Waste characterisations and compliance with applicable laws are the responsibility solely of the waste generator.
Special Precautions for Land Fill	For unused and uncontaminated product, the preferred disposal options include sending to a licensed, permitted incinerator or other thermal destructive device.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Triethanolamine Commercial
Class	C2 Combustible Liquids - Flash Point >93°C, Closed Cup, Not Excluded Flammable
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Triethanolamine Commercial

Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	Triethanolamine Commercial
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	TROLAMINE
Poisons Schedule (Aust)	Schedule 5

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined

Malaysia (List of Classified Substances)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Taiwan (TCSI)	Not Determined
USA (TSCA)	Not Determined
Mexico (INSQ)	Not Determined

16. OTHER INFORMATION

Related Product Codes	TRETAM1000, TRETAM1001, TRETAM1002, TRETAM1003, TRETAM1004, TRETAM1005, TRETAM1006, TRETAM1007, TRETAM1008, TRETAM1009, TRETAM1010, TRETAM1011, TRETAM1012, TRETAM1013, TRETAM1014, TRETAM1015, TRETAM1016, TRETAM1017, TRETAM1018, TRETAM1019, TRETAM1020, TRETAM1021, TRETAM1100, TRETAM1101, TRETAM1102, TRETAM1200, TRETAM1201, TRETAM1202, TRETAM1300, TRETAM1301, TRETAM1400, TRETAM1500, TRETAM1600, TRETAM1800, TRETAM1801, TRETAM1802, TRETAM1803, TRETAM1804, TRETAM1805, TRETAM1806, TRETAM1807, TRETAM1808, TRETAM1809, TRETAM1810, TRETAM1811, TRETAM1812, TRETAM1813, TRETAM1814, TRETAM1815, TRETAM1816, TRETAM1817, TRETAM1818, TRETAM1819, TRETAM1820, TRETAM1821, TRETAM1822, TRETAM1823, TRETAM1824, TRETAM1825, TRETAM1826, TRETAM1827, TRETAM1828, TRETAM1829, TRETAM1830, TRETAM1831, TRETAM1832, TRETAM1833, TRETAM1834, TRETAM1835, TRETAM1838, TRETAM1839, TRETAM1840, TRETAM1841, TRETAM1842, TRETAM1843, TRETAM1844, TRETAM1845, TRETAM1846, TRETAM2000, TRETAM2001, TRETAM2500, TRETAM2830, TRETAM2831, TRETAM2832, TRETAM2840, TRETAM2850, TRETAM3000, TRETAM3001, TRETAM3002, TRETAM3010, TRETAM3200, TRETAM3201, TRETAM3202, TRETAM3203, TRETAM3210, TRETAM3250, TRETAM3300, TRETAM3301, TRETAM3302, TRETAM3350, TRETAM3351, TRETAM3352, TRETAM3355, TRETAM3400, TRETAM3500, TRETAM3501, TRETAM3502, TRETAM3503, TRETAM3600, TRETAM4000, TRETAM4100, TRETAM4101, TRETAM4102, TRETAM4200, TRETAM4201, TRETAM4202, TRETAM4300, TRETAM4400, TRETAM4500, TRETAM5900, TRETAM6000, TRETAM6500, TRETAM6600, TRETAM6700, TRETAM7000, TRETAM7001, TRETAM7032, TRETAM7033, TRETAM7034, TRETAM7043, TRETAM7054, TRETAM8500, TRETAM8501, TRETAM8502, TRETAM8551, TRETAM9500, TRETAM9510, TRETAM9520, TRETAM9800, TRETAM9900
Revision	6
Revision Date	06 Jul 2023
Reason for Issue	Updated SDS
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** Square Centimetres **CO2** Carbon Dioxide **COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius **EPA (New Zealand)** Environmental Protection Authority of New Zealand **deg F (°F)** Degrees Farenheit **g** Grams **g/cm^3** Grams per Cubic Centimetre **g/l** Grams per Litre **HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other. **inHg** Inch of Mercury **inH2O** Inch of Water **K** Kelvin **kg** Kilogram **kg/m^3** Kilograms per Cubic Metre **lb** Pound **LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50%

(one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or **L** Litre
m^3 Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m^3 Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH2O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight

Safety Data Sheet
VeraVis*

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name VeraVis*
Product code PID21288

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Viscosifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Derivative of substituted acrylamides copolymer

2-methylpropan-2-ol (impurity)

2.3 Other hazards

May form combustible dust concentrations in air
Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Derivative of substituted acrylamides copolymer	Listed	Proprietary	60-100
2-methylpropan-2-ol (impurity)	200-889-7	75-65-0	1-<5

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: If heated strongly or burned, oxides of carbon and nitrogen, ammonia, chlorine oxides, hydrogen chloride and organic fumes are released.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery. Suspended dust may present a dust explosion hazard.

6.2 Environmental precautions

Do not allow material to contaminate ground water system. Large spills released to the environment may disturb the natural chemical balance of soil/fresh water.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Use non-sparking tools and equipment. Take precautionary measures against static discharges. Avoid dust formation. Powdered material may form explosive dust-air mixtures.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Contaminated surfaces will be extremely slippery. Avoid contact with skin, eyes and clothing. Avoid handling causing generation of dust. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Fine dust dispersed in air may ignite.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Strong oxidizing agents Strong acids

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Derivative of substituted acrylamides copolymer	Not determined	Not determined	Not determined
2-methylpropan-2-ol (impurity)	100 ppm TWA 303 mg/m³ TWA	150ppmSTEL 455mg/m³STEL 100ppmTWA 303mg/m³TWA	100 ppm TWA 303 mg/m³ TWA
Chemical Name	**India**	**Indonesian**	**Japan**
Derivative of substituted acrylamides copolymer	Not determined	Not determined	Not determined
2-methylpropan-2-ol (impurity)	Not determined	100 ppm TWA 303 mg/m³ TWA	50 ppm OEL 150 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Derivative of substituted acrylamides copolymer	Not determined	Not determined	Not determined

2-methylpropan-2-ol (impurity)	10 mg/m³ MAC	Not determined	150 ppm STEL 455 mg/m³ STEL 100 ppm TWA 303 mg/m³ TWA
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Derivative of substituted acrylamides copolymer	Not determined	Not determined	Not determined
2-methylpropan-2-ol (impurity)	100 ppm TWA 303 mg/m³ TWA	100 ppm TWA 300 mg/m³ TWA	10 mg/m³ MAC
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Derivative of substituted acrylamides copolymer	Not determined	Not determined	Not determined
2-methylpropan-2-ol (impurity)	100 ppm TWA	Not determined	Not determined

Notes
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation, especially in confined areas Provide appropriate exhaust ventilation at places where dust is formed

Personal protective equipment

Eye protection — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

Hand protection — Wear gloves according to EN 374 to protect against skin effects from powders Wear chemical resistant gloves such as nitrile or neoprene. Frequent change is advisable

Respiratory protection — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection — Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

Hygiene Measures — Wash hands before breaks and immediately after handling the product



8.2.3 Environmental exposure controls

Environmental exposure — Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state — Solid

Appearance	Granules
Odor	Odorless
Color	White

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution	2 - 5	@ 5 g/l
Melting / freezing point	> 150 °C / > 302 °F	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.26 - 1.27	
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 150 °C / > 302 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use. Dust may form explosive mixture in air.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
Oxidizing agents may cause exothermic reactions.

10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Avoid contact with heat, sparks, open flame, and static discharge.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Derivative of substituted acrylamides copolymer	No data available	No data available	No data available
2-methylpropan-2-ol (impurity)	= 2200 mg/kg (Rat)	> 2 g/kg (Rabbit)	> 10000 ppm (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Derivative of substituted acrylamides copolymer	> 480 mg/l LC50 Cyprinodon variegatus 96 h	> 700 mg/l EC50 Skeletonema 72 h	> 400 mg/l LC50 Acartia 48 h
2-methylpropan-2-ol (impurity)	6130 - 6700 mg/L LC50 Pimephales promelas 96 h	> 1000 mg/L EC50 Desmodesmus subspicatus 72 h	= 933 mg/L EC50 Daphnia magna 48 h 4607 - 6577 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

Not readily biodegradable. See component information below.

Chemical Name	Persistence and degradability
Derivative of substituted acrylamides copolymer	Not readily biodegradable

12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

Chemical Name	Bioaccumulation
Derivative of substituted acrylamides copolymer	Does not bioaccumulate

12.4 Mobility

Mobility
Soluble in water. See component information below.

Chemical Name	Mobility
Derivative of substituted acrylamides copolymer	Soluble in water

Mobility in soil
No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by

Road and Rail (ADG)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Does not comply
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Does not comply

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	06-Jan-2020
Revision date	16-Dec-2022
Version	3
This SDS has been revised in the following section(s)	3, 9, No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

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SDS no. PID2234
Version 3
Revision date 17-Feb-2022
Supersedes Date: 19-Mar-2019

Safety Data Sheet
WALNUT NUT PLUG* (All Grades)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name	WALNUT NUT PLUG* (All Grades)
Product code	PID2234
Country Limitations	This SDS is not for use in the European Union (EU).
Synonyms	WALNUT NUT PLUG* FINE, WALNUT NUT PLUG* MEDIUM, WALNUT NUT PLUG* COARSE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Lost circulation material.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label elements

Signal word

None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains
Cellulose

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Cellulose	Listed	Proprietary	60-100
Crystalline silica (impurity)	238-878-4	14808-60-7	<1

3.2 Mixtures

Not applicable

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First Aid Measures

4.1 First aid measures

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye Contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component Information

Chemical Name	Arabic	Australia	Egypt
Cellulose	10 mg/m³ TWA	10mg/m³TWAinhalable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.05mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Cellulose	Not determined	10 mg/m³ TWA	Not determined
Crystalline silica (impurity)	Not determined	0.025 mg/m³ TWA	0.03 mg/m³ OEL
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**
Cellulose	10 mg/m³ MAC	Not determined	10 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	0.1 mg/m³ TWA	0.05 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Cellulose	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	1 mg/m³ TWA 3 mg/m³ MAC

			Fibrogenic substance glass;in the form of disintegration aerosol;limit is for total mass of aerosols 1153 Fibrogenic substance containing >70% Silicon dioxide in dust;limit is for total mass of aerosols 1154
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Cellulose	Not determined	10 mg/m³ TWA 5 mg/m³ TWA 20 mg/m³ STEL	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

Respiratory protection No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state Solid
Appearance No information available
Odor Odorless
Color Light brown

Property	Values	Remarks
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	193 °C / 380 °F	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.1 - 1.4	@ 20 °C
Bulk density	577-641 kg/m³/36-40 lb/ft3	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	. Not applicable	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	Not determined	
Density and/or Relative Density	No information available	

Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cellulose	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h
Crystalline silica (impurity)	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of Exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

11.2 Information on other hazards

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Cellulose	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

No product level data available. See component information below.

Chemical Name	Persistence and degradability
Crystalline silica (impurity)	Inorganic compound

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

Chemical Name	Bioaccumulation
Crystalline silica (impurity)	Product/Substance is inorganic

12.4 Mobility

Mobility
Insoluble in water.

Chemical Name	Mobility
Crystalline silica (impurity)	Insoluble in water

Mobility in soil
See component information below.

Chemical Name	Mobility in soil
Crystalline silica (impurity)	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

This SDS is not for use in the European Union (EU).

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	19-Mar-2019
Revision date	17-Feb-2022
Version	3
This SDS has been revised in the following section(s)	1, 2, 12, 15, 16 No changes with regard to classification have been made.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

Training Advice
Do not handle until all safety precautions have been read and understood
Follow general hygiene considerations recognized as common good workplace practices

HMIS classification

Health	1*
Flammability	1
Physical hazard	0
PPE	E

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Disclaimer

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Table A System Details

Operator	BURU ENERGY
Project/Well	Well Drilling and Workover Campaign
System	Drilling Fluid, & Completion Brine
Total Volume of System	*3,500 m^3

**Includes 100% contingency*

Table B Product List

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
Water	N/A	Base Fluid		76.98%	N
AvaPolymer 5050 / HydroFilm PV	Newpark	Encapsulating Agent - provides shale inhibition	**CONSTITUENT 1 – (60%)** **Toxicology** **Data:** ATEmix (oral) 27,000.00 mg/kg ATEmix (dermal) 2,002.00 mg/kg **CONSTITUENT 2 -** **(40%)** **Toxicology** **Data:** Oral Toxicity (LD50) - 16000 mg/kg (guinea pig), Dermal Toxicity (LD50) - > 2000 mg/kg (rabbit), TDLo (oral) 140 mg/kg (rat) **Ecotoxicity Data:** This product has an CEFAS **OCNS category and registration number Gold - 28769** **Biodegradation/bioaccumulation:** No information available.	2.12%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
Barite / API Barite / NewBar	Newpark	Weighting Agent	**CONSTITUENT 1 – (>89%)** **Toxicology Data:** Oral Toxicity (LD50) - > 5000 mg/kg (rat) Dermal Toxicity (LD50) - > 2000 mg/kg (rat) **CONSTITUENT 2 - (<3%)** **Toxicology Data:** LCLo (inhalation) = 300 ug/m³/10 years (human) TCLo (inhalation) = 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) **Ecotoxicity Data:** Aquatic toxicity: LC50 (Fresh Water Trout) > 21,000 ppm/96hrs. LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs. **Biodegradation/bioaccumulation:** Barite is a naturally occurring salt (Barium Sulphate). The product is an inert and none reactive salt, non-Toxic and no mobility in soil. Barium sulphate (major ingredient of barite ~60-100%) is insoluble in water and not biodegradable. The product is not known to be bioaccumulative.	8.71%	Y
Bentonite / API Bentonite/Maxigel / NewGel	Newpark	Viscosifier	**CONSTITUENT 1 – (90-98%)** **Toxicology Data:** LD50 (intravenous) = 35 mg/kg (rat), LD50 (oral): > 2000mg/kg (rat), LDLo (intravenous) = 10 mg/kg (dog), Inhalation LC 50: > 5.27 mg/L, 4hr (rat) **CONSTITUENT 2 – (2-10%)** **Toxicology Data:** LCLo (inhalation) = 300 ug/m³/10 years (human), TCLo (inhalation) = 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis). **CONSTITUENT 2 – (2-4%)** **Toxicology Data:** Oral Toxicity (LD50) 4090 mg/kg (rat) Dermal Toxicity (LD50) > 2000 mg/kg (rabbit) Inhalation Toxicity (LC50) 800 mg/m³/2 hours LD50 (intraperitoneal) 117 mg/kg (mouse) LD50 (subcutaneous) 2210 mg/kg (mouse)	0.39%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Ecotoxicity Data: EC50 Daphnia > 100 mg/l, 48 hours EC50 Freshwater algae > 100 mg/l, 72 hours LC50 Freshwater fish = 16000 mg/l, 96 hours LC50 Marine water fish = 2800 - 3200 mg/l, 24 hours EC50 Coon stripe shrimp (Pandalus danae) = 24.8 mg/l, 96 hours EC50 Dungeness or edible crab (Cancer magister) = 81.6 mg/l, 96 hours LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss) = 19000 mg/l, 96 hours **Biodegradation/bioaccumulation:** Will not bioaccumulate. The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.		
Caustic Soda	Newpark	pH control-prevents bacteria & corrosion.	**Toxicology Data:** LD50 (Intraperitoneal): 40 mg/kg (mouse) LDLo (Ingestion): 1.57 mg/kg (human) LDLo (oral) 500 mg/kg (rabbit) **Ecotoxicity Data:** EC50 Ceriodaphnia: 40 mg/L. **Biodegradation/bioaccumulation:** Does not bioaccumulate. Caustic Soda is inorganic compound (NaOH), which is neutralized in nature into salt and water. Being inorganic product, biodegradation is not a concern.	0.11%	Y
Citric Acid	Newpark	pH Buffer	**Toxicology Data:** LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Intraperitoneal): 290 mg/kg (rat) LD50 (Intravenous): 42 mg/kg (mouse) LDLo (Ingestion): 7000 mg/kg (rabbit) **Ecotoxicity Data:** LC50 (Leuciscus idus melanotus): 440 mg/L/48hrs., LC50 (Daphnia magna (Water flea)): 1.535 mg/L/24hrs. **Biodegradation/bioaccumulation:** This product does not bioaccumulate	0.04%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
Defoam-AP400	Newpark	Defaomer suitable for High Temperatures	**CONSTITUENT 1 – (45-60%)** **Toxicology Data:** LD50 (ingestion) 33750 mg/kg (rat) **CONSTITUENT 2 – (45-50%)** **Toxicology Data:** This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. **Ecotoxicity Data:** Toxicity to Algae - No information available Toxicity to Fish – No information available Toxicity to Microorganisms - No information available Toxicity to Invertebrates – No information available **Biodegradation/bioaccumulation:** Component is considered not Bioaccumulative	0.09%	y
FlexFirm KA	Newpark	Inhibits dispersion of drilled shale cuttings	**Toxicology Data:** Oral Toxicity (LD50) 1600 mg/kg (rat) **Ecotoxicity Data:** The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance of water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm **Biodegradation/bioaccumulation:** Neither silica nor potassium will appreciably bio-concentrate up the food chain.	0.45%	Y
Idcide-20	Newpark	Biocide/Prevents bacterial contamination of the mud	**Toxicology Data:** LD50 (ingestion) 248 mg/kg (rat) TDLo (ingestion) 650 mg/kg/13 weeks - intermittent (rat) **Ecotoxicity Data:** LC50 (Rainbow Trout) = 119 mg/L/96 hr LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr EC50 (Daphnia Magna) = 19 mg/L/48 hr	0.15%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LC50 (Brown Shrimp) = 340 mg/L/96 hr LC50 (Mysid Shrimp) = 9.5 mg/L/96 hr LC50 (Sheepshead Minnow) = 94 mg/L/96 hr LC50 (Jevenile Plaice) = 86 mg/L/96 hr **Biodegradation/bioaccumulation:** This product is readily biodegradable.		
Magnesium Oxide	Newpark	pH Buffer	**CONSTITUENT 1 – (>94%)** **Toxicology Data:** This product is expected to be of low toxicity. **CONSTITUENT 2 – (<3.5%)** **Toxicology Data:** This product is expected to be of low toxicity. **CONSTITUENT 3 – (<2.5%)** **Toxicology Data:** LD50 (oral) 3160 mg/kg (rat) **Ecotoxicity Data:** This product is expected to be of low toxicity. **Biodegradation/bioaccumulation:** Not expected to bioaccumulate. **OCNS category and registration number E - 28127**	0.18%	Y
NDFT 376 / 377 – Dynafiber AP Fine / Dynafiber AP Medium	Newpark	Prevent lost circulation	**Toxicology Data:** This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. Oral LD50 (rat) is > 5000 mg/kg. Dermal LD50 (rabbit) is > 2000 mg/kg. Inhalation Toxicity LC50 (rat) is 5800 mg/m³/2 hours. **Ecotoxicity Data:** No information provided **Biodegradation/bioaccumulation:** No information available.	0.44%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
NewPac LV / Drispac SL	Newpark	Fluid Loss	**CONSTITUENT 1 – (>88%)** **Toxicology Data:** LD50 (Ingestion): 16000 mg/kg (guinea pig) LD50 (Skin): > 2000 mg/kg (rabbit) TDLo (Ingestion): 140 mg/kg (rat) **CONSTITUENT 2 – (<1.8%)** **Toxicology Data:** LC50 (Inhalation): > 42000 mg/m3/1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Intraperitoneal): 2602 mg/kg (mouse) LD50 (Intravenous): 645 mg/kg (mouse) LD50 (Skin): > 10000 mg/kg (rabbit) LD50 (Subcutaneous): 3000 mg/kg (mouse) LDLo (Ingestion): 8000 mg/kg (rabbit) LDLo (Intravenous): 300 mg/kg (guinea pig) LDLo (Subcutaneous): 2160 mg/kg (guinea pig) TDLo (Ingestion): 12357 mg/kg (human) **CONSTITUENT 3 – (<0.7%)** **Toxicology Data:** LD50 (Ingestion): 6700 mg/kg (mouse) LDLo (Ingestion): 500 mg/kg (cat) **Ecotoxicity Data:** LC50 (Fresh Water Trout) > 21,000 ppm/96hrs. LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs. **Biodegradation/bioaccumulation:** Not expected to bioaccumulate. .	0.88%	Y
NewZan D / Xanthan Gum (P) / Flowzan /	Newpark	Viscosifier	**Toxicology Data:** This product is expected to be of low toxicity. LD50 (oral) > 1000 mg/kg (mouse) LD50 (oral) > 45,000 mg/kg (rat) LD50 (oral) > 20,000 mg/kg (dog) LD50 (intraperitoneal): > 50 mg/kg (mouse) LD50 (intravenous): 100-250 mg/kg (mouse **Ecotoxicity Data:** No information available.	0.65%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Biodegradation/bioaccumulation: Not expected to bioaccumulate.		
Potassium Chloride	Newpark	Shale swelling inhibition (smectite & illite clays)	**Toxicology Data:** Oral Toxicity: An oral LD50 in rats of 2600 mg/kg was reported for potassium chloride. Additional toxicity data for potassium chloride: LD50 (Intraperitoneal): 620 mg/kg (mouse) LD50 (Intravenous): 117 mg/kg (mouse) LDLo (Ingestion): 20 mg/kg (man) LDLo (Intraperitoneal): 900 mg/kg (guinea pig) LDLo (Intravenous): 77 mg/kg (guinea pig) LDLo (Subcutaneous): 2120 mg/kg (frog) TDLo (Ingestion): 60 mg/kg/days (woman) **Ecotoxicity Data:** In short-term acute toxicity tests with fish, daphnia and algae the following results were found (lowest test result values): Ictalurus punctulus 48h-LC50 = 720 mg/l; Daphnia magna: 48h-LC50 = 177 mg/l; Nitzschia linearis: 120 h-EC50 = 1337 mg/l. A chronic reproductive test with the invertebrate Daphnia magna gave a LOEC of 101 mg/l. All the studies compiled on the acute and chronic aquatic toxicity were > 100 mg/L. Thus it is concluded that KCl is not hazardous to freshwater organisms. Taking into considerations the background concentrations of KCl in seawater (380 mg/l K+ and 19,000 mg/l Cl-), it is concluded that there is no reason for further investigations of KCl on marine species. The low concern for the environment is supported by the absence of a bioaccumulation potential for the substance. **Biodegradation/bioaccumulation:** Biodegradability does not pertain to inorganic substances. Does not bioaccumulate	8.29%	Y
Soda Ash	Newpark	pH / Hardness control	**Toxicology Data:** Oral Toxicity (LD50) 4090 mg/kg (rat) Dermal Toxicity (LD50) > 2000 mg/kg (rabbit) Inhalation Toxicity (LC50) 800 mg/m³/2 hours LD50 (intraperitoneal) 117 mg/kg (mouse) LD50 (subcutaneous) 2210 mg/kg (mouse) **Ecotoxicity Data:** Fishes, Lepomis macrochirus, LC50, 96 h, 300 mg/l. Crustaceans, Ceriodaphnia dubia, EC50, 48 h, 200 - 227 mg/l. **Biodegradation/bioaccumulation:**	0.10%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Not expected to bioaccumulate.		
Sodium Bicarbonate	Newpark	pH Buffer, Contamination Treatment	**Toxicology Data:** LD50 (Ingestion): 3360 mg/kg (mouse) , LC50 (inhalation): 4.74 mg/L (rat) **Ecotoxicity Data:** LC50 (Oncorhynchus mykiss) = 7.700 mg/l/96hrs. LC50 (Lepomis macrochirus) = 7.100 mg/l/96hrs. EC50 (Crustaceans, Daphnia magna) = 4.100 mg/l/48hrs LOEC (Crustaceans, Daphnia magna) = 3.100 mg/l/48hrs. **Biodegradation/bioaccumulation:** Not expected to bioaccumulate.	0.04%	Y
Sodium Sulphite	Newpark	Oxygen Scavenger	**CONSTITUENT 1 – (>97%)** **Toxicology Data:** Oral Toxicity (LD50) 820 mg/kg (mouse) LD50 (intraperitoneal) 950 mg/kg (mouse) LD50 (intravenous) 175 mg/kg (mouse) LDLo (intravenous) 400 mg/kg (cat) LDLo (oral) 2825 mg/kg (rabbit) LDLo (subcutaneous) 600 mg/kg (rabbit) **CONSTITUENT 2 – (<2.5%)** **Toxicology Data:** Oral Toxicity (LD50) - 5989 mg/kg (mouse) LD50 (intravenous) 1220 mg/kg (rabbit) LDLo (intravenous) 1220 mg/kg (mouse) TDLo (oral) 14 g/kg (mouse - 8-12 days pregnant) TDLo (subcutaneous) 806 mg/kg/26 weeks intermittently (mouse) **CONSTITUENT 3 – (<0.1%)** **Toxicology Data:** Oral Toxicity (LD50) - 4090 mg/kg (rat) Dermal Toxicity (LD50) - > 2000 mg/kg (rabbit) Inhalation Toxicity (LC50) - 800 mg/m³/2 hours LD50 (intraperitoneal) 117 mg/kg (mouse) LD50 (subcutaneous) 2210 mg/kg (mouse	0.38%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Ecotoxicity Data: No information available. **Biodegradation/bioaccumulation:** Biodegradability does not pertain to inorganic substances. This product does not bioaccumulate. **OCNS category (actual or equivalent chemical) and Registration number. E-28128**		
TOTAL				**100.00**	
Ancor-1	Newpark	Corrosion Inhibitor	**CONSTITUENT 1 (68-72%)** **Toxicology Data:** Oral Toxicity (LD50) 6400 mg/kg (rat) Dermal Toxicity (LD50) > 2000 mg/kg (rabbit) LD50 (Ingestion): 2200 mg/kg (rabbit) LD50 (Intraperitoneal): 1450 mg/kg (mouse) LD50 (Skin): > 20 mL/kg (rabbit) TDLo (Ingestion): 16 g/kg/64 weeks (mouse - cancer) **Ecotoxicity Data:** LC50 (shrimp): > 100 ppm. **Biodegradation/bioaccumulation:** Not expected to bioaccumulate. **CONSTITUENT 2 (28-32%)** Non-hazardous ingredient.	0.04%	Y
AvaGreenLube	Newpark	Lubricant	**Toxicology Data:** This product is expected to be of low acute toxicity **Ecotoxicity Data:** LC50 (Fish) 48 h: > 10000 µg / L LC50 (Mollusc) 48 h: > 10000 µg /L LC50 (Amphibious) 48 h: > 7600 µg/L **Biodegradation/bioaccumulation:**	0.64%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Low potential for bío-accumulation in aquatic organisms or terrestrial even after repeated exposure.		
NoFoam NS (previously called AVADEFOAM NS)	Newpark	Defoamer suitable for WBM	**CONSTITUENT 1 (95%)** **Toxicology Data:** Acute oral toxicity (LD50): 9380 mg/kg [Rat]. **CONSTITUENT 2 (5%)** **Toxicology Data:** Acute toxicity -Dermal LD50 Albino rabbit - > 2000 mg/kg LD50 Oral Albino Sprague-Dawley rat > 10000 mg/kg **Ecotoxicity Data:** (LC50): 100 mg/l 96 hours [Fish] EC50 Bacteria (Pseudomonas putida) > 10000 mg/l, 16 hr Aquatic Algae EL50 > 1000 mg/l, 72 hr Growth rate; OECD 201 Green algae (Selenastrum capricornutum) Crustacea EL50 Water flea (Daphnia magna) > 1000 mg/l, 48 hr OECD 202 Fish LL50 Zebra danio (Danio rerio) > 10000 mg/l, 96 hr **Biodegradation/bioaccumulation:** No information available **OCNS category and registration number Gold - 27915**	0.04%	Y
NewPerm NF / AvaPerm NF	Newpark	Prevent swelling clays by blocking the site for water hydration.	**CONSTITUENT 1 (30-50%)** **Toxicology Data:** Oral Toxicity (LD50) - 1500 mg/kg (Rat) Dermal Toxicity (LD50) - > 200 mg/kg (Rabbit) **CONSTITUENT 2 (<15%)** **Toxicology Data:** Oral Toxicity (LD50) - 238 - 277 mg/kg (Rat) Dermal Toxicity (LD50) - > 5010 mg/kg (Rabbit) Inhalation Toxicity (LC50) - 1.68 mg/L (Rat) 1 h **CONSTITUENT 3 (45 - 65%)** **Toxicology Data:** Non-hazardous ingredient.	0.96%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Ecotoxicity Data: Fish - 282: 96 h Gambusia affinis mg/L LC50 static The environmental impact of this product has not been fully investigated.34 % of the mixture consists of component(s) of unknown hazards to the aquatic environment. **Biodegradation/bioaccumulation:** No information available. **AvaPerm NF - OCNS category and registration number Gold - 27652** **NewPerm NF - OCNS category and registration number Gold - 28972**		
Barite / API Barite	Newpark	Weighting Agent	As Above	7.98%	y
Calcium Chloride (94%) Powder	Newpark	Weighting Agent	**CONSTITUENT 1 (94-97%)** **Toxicology Data:** Oral Toxicity (LD50) – 2301 mg/kg (rat) Dermal Toxicity (LD50) - > 5000 mg/kg (rabbit) LD50 (Ingestion): 1000 mg/kg (rat) LD50 (Intraperitoneal): 210 mg/kg (mouse) LD50 (Intravenous): 42 mg/kg (mouse) LD50 (Subcutaneous): 823 mg/kg (mouse) LDLo (Ingestion): 1384 mg/kg (rabbit) LDLo (Intravenous): 150 mg/kg (guinea pig) LDLo (Subcutaneous): 249 mg/kg (cat) TDLo (Intravenous): 20 mg/kg/1 hour (woman) **CONSTITUENT 2 (1-5%)** **Toxicology Data:** LC50 (Inhalation): > 42000 mg/m3/1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Intraperitoneal): 2602 mg/kg (mouse) LD50 (Intravenous): 645 mg/kg (mouse) LD50 (Skin): > 10000 mg/kg (rabbit) LD50 (Subcutaneous): 3000 mg/kg (mouse) LDLo (Ingestion): 8000 mg/kg (rabbit) LDLo (Intravenous): 300 mg/kg (guinea pig) LDLo (Subcutaneous): 2160 mg/kg (guinea pig) TDLo (Ingestion): 12357 mg/kg (human) **CONSTITUENT 3 (1%)**	0.08%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Toxicology Data: Non-hazardous ingredient. **Ecotoxicity Data:** No information available. **Biodegradation/Bioaccumulation:** Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.		
Calcium Carbonate Various Grades - Limestone LSC / Circal 60/16 / Unical C300C, Omyacarb 40 / Omyadrill 25 / Omyadrill 35	Newpark	Bridging & Weighting Agent	**CONSTITUENT 1 (>96%)** **Toxicology Data:** Oral Toxicity (LD50) – > 5000 mg/kg (rat) **CONSTITUENT 2 (<1%)** **Toxicology Data:** LCLo (inhalation) = 300 ug/m³/10 years (human) TCLo (inhalation) = 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) **Ecotoxicity Data:** Calcium carbonate occurs naturally in a wide variety of substances including limestone, marble and egg shells. It is not anticipated to cause adverse environmental effects. **Biodegradation/Bioaccumulation:** This product does not bioaccumulate. **Carcinogenicity/Mutagenicity:** Insufficient data available to classify.	0.19%	Y
Defoam-AP400	Newpark	Defaomer suitable for High Temperatures	**CONSTITUENT 1 – (45-60%)** **Toxicology Data:** LD50 (ingestion) 33750 mg/kg (rat) **CONSTITUENT 2 – (45-50%)** **Toxicology Data:** This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. **Ecotoxicity Data**:	0.05%	y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Toxicity to Algae - No information available Toxicity to Fish – No information available Toxicity to Microorganisms - No information available Toxicity to Invertebrates – No information available **Biodegradation/bioaccumulation**: Component is considered not Bioaccumulative		
Driscal D	Drilling Specialties Company	High temperature fluid loss control agent	**Toxicology Data:** LCLo (Inhalation): 300 ug/m3/10 years (human), LDLo (Intratracheal): 200 mg/kg (rat) LDLo (Intravenous): 20 mg/kg (dog), TCLo (Inhalation): 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) The product contains no substances classified as hazardous to health in concentrations which should be taken into account. **Ecotoxicity Data**: Toxicity to fish: LC50: >1,800 mg/L Scophthalmus maximus (96h). Toxicity to invertebrates: LC50: 599 mg/L Acartia tonsa (48h) Toxicity to algae: EC50: 2,693 mg/L Skeletonema costatum (72h) This material is not expected to be harmful to aquatic organisms. **Biodegradation/bioaccumulation**: Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification. Accumulation in aquatic organisms is unlikely. No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.	0.02%	Y
DSCO™ Defoam	Drilling Specialties Company	Defoamer	**CONSTITUENT 1 – (>60%)** **Toxicology Data:** Oral Toxicity: An oral LD50 300 - 57000 mg/kg (range) **CONSTITUENT 2 – (<40)** Non-hazardous ingredient. **Ecotoxicity Data**: No information available. **Biodegradation/bioaccumulation**: This product is not expected to bioaccumulate	0.05%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
FlexFirm KA	Newpark	Inhibits dispersion of drilled shale cuttings	**Toxicology Data:** Oral Toxicity (LD50) 1600 mg/kg (rat) **Ecotoxicity Data:** The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance of water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm **Biodegradation/bioaccumulation:** Neither silica nor potassium will appreciably bio-concentrate up the food chain.	0.16%	Y
Frac Attack	Newpark	Prevent lost circulation	**Constituent 1 as an ingredient (<10%)** **Acute Toxicity:** LD50: 3059 mg/kg (Mouse/Rat) LC50 (96 h): 1070 mg/L (Freshwater fish) **Chronic Toxicity:** Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. **Biodegradation/bioaccumulation:** Reacts with water. Persistence is unlikely based on information available. **Constituent 2 as an ingredient (<5%)** **Acute Toxicity:** LD50 (ingestion) 7300 mg/kg (mouse) **Chronic Toxicity:** Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. **Biodegradation/bioaccumulation:** The product is not known/not expected to be Bioaccumulative. **Constituent 3 as an ingredient (<5%)** **Acute Toxicity:** Concentration-based toxicity values were not available. Silica is a naturally occurring, insoluble component of soil. TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis) **Chronic Toxicity:**	0.06%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Product contains crystalline silica in the form of quartz or cristobalite which IARC has determined can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A – possible carcinogen to humans), only by exposure through inhalation. **Biodegradation/bioaccumulation:** Biodegradation is not applicable to inorganic compounds. **Constituent 4 as an ingredient (<3%)** **Acute Toxicity:** Concentration-based toxicity values were not available. Silica is a naturally occurring, insoluble component of soil. LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) **Chronic Toxicity:** Product contains crystalline silica in the form of quartz or cristobalite which IARC has determined can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A – possible carcinogen to humans), only by exposure through inhalation. **Biodegradation/bioaccumulation:** Biodegradation is not applicable to inorganic compounds. **Constituent 5 as an ingredient (<50%)** **Acute Toxicity:** LC50 (96 h): >100 mg/L (Oncorhynchus mykiss) LC50 (48 h): >100 mg/L (Daphnia Magna) LC50 (48 h): >100 mg/L (Scenedesmus quadricauda) Chronic Toxicity and Biodegradation/bioaccumulation: Natural product which is not anticipated to cause adverse environmental effects. **Constituent 6 as an ingredient (<50%)** **Acute Toxicity:** LD50: >2,000 mg/kg (Rat, LIR-30) Dermal Irritation (Rabbit): Negative (LIR-30) **Chronic Toxicity and Biodegradation/bioaccumulation:** General-purpose rubber used to replace natural rubber. The toxicological properties have not been fully investigated. **Constituent 7 as an ingredient (<50%)** **Acute Toxicity:** LD50 (Oral) >5000 mg/kg (rat) LD50 (skin) >20000 mg/kg (rat) LD50 (inhalation) >20000 mg/kg (rat)		

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Chronic Toxicity and Biodegradation/bioaccumulation: General-purpose rubber used to replace natural rubber. The toxicological properties have not been fully investigated. **Constituent 8 as an ingredient is a natural product (<30%)** **Acute Toxicity:** LC50 (inhalation) > 5800 mg/m³/4 hours (rat) LD50 (ingestion) > 5000 mg/kg (rat) LD50 (intraperitoneal) > 31600 mg/kg (rat) LD50 (skin) > 2000 mg/kg (rabbit). **Chronic Toxicity and Biodegradation/bioaccumulation:** Natural product which is not anticipated to cause adverse environmental effects. **Constituent 9 as an ingredient (<15%)** **Acute Toxicity:** LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis). **Chronic Toxicity:** Product contains crystalline silica in the form of quartz or cristobalite which IARC has determined can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A – possible carcinogen to humans), only by exposure through inhalation. **Biodegradation/Bioaccumulation:** Not applicable to inorganic compounds. **Constituent 10 as an ingredient (<10%)** **Acute Toxicity:** Fish Toxicity 96h LC50: 8-19 g/L (Salmo gairdneri). **Chronic Toxicity:** Product contains crystalline silica in the form of quartz or cristobalite which IARC has determined can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A – possible carcinogen to humans), only by exposure through inhalation. **Biodegradation/Bioaccumulation:** Not applicable to inorganic compounds. **Constituent 11 as an ingredient (<2%)** LD50 (oral) 3870 mg/kg (Rats). TCLo (inhalation) 400 mg/kg (human). **Chronic Toxicity:** Not listed as a carcinogen by ACGIH, IARC, NTP or OSHA.		

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Biodegradation/Bioaccumulation: The high pH of this material makes it harmful to aquatic life.		
Gagetrol	Newpark	HT Fluid Loss Additive	**Toxicology Data:** Low toxicity - low irritant. Under normal conditions of use, adverse health effects are not anticipated **Ecotoxicity Data:** This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. **Biodegradation/bioaccumulation:** Not expected to bioaccumulate. **OCNS category and registration number Gold - 29306**	0.06%	Y
Geovis	Newpark	HT Viscosifier Additive	**Toxicology Data:** Oral LD50 - > 5000 mg/kg (rat) This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. **Ecotoxicity Data:** The notified polymer is not toxic to fish (rainbow trout), aquatic invertebrates (daphnia magna) and marine invertebrates (acartia tonsa) under test conditions. **Biodegradation/bioaccumulation:** Considered readily biodegradable. Bioaccumulative potential - No experimental results provided. However, based on the molecular weight, water solubility and Kow value the notified polymer is not expected to bioaccumulate.	0.06%	Y
Fracseal F/M/C	Newpark	LCM	**Toxicology Data:** Oral LD50 (rat) is > 5000 mg/kg. Dermal LD50 (rabbit) is > 2000 mg/kg. LC50 (rat) is 510 mg/m³/2 hours. Inhalation LC50 - > 5800 mg/m³/4 hours (rat) LD50 (intraperitoneal) > 31600 mg/kg (rat) **Ecotoxicity Data:** No information available. **Biodegradation/bioaccumulation:** No information available.	0.07%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
JK-161 LV / JK-261 / JK-261HP	Newpark	Encapsulating Agent - provides shale inhibition	**Toxicology Data:** This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 401). **Ecotoxicity Data:** (10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis bahia = 48hr LC50 = 16.2 mg/L. Menidia beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia tonsa = 48 hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 Day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg] **Biodegradation/bioaccumulation:** Not readily biodegradable (by OECD criteria). Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.	0.08%	Y
Magnesium Oxide	Newpark	pH Buffer	**CONSTITUENT 1 – (>94%)** **Toxicology Data**: This product is expected to be of low toxicity. **CONSTITUENT 2 – (<3.5%)** **Toxicology Data:** This product is expected to be of low toxicity. **CONSTITUENT 3 – (<2.5%)** **Toxicology Data:** LD50 (oral) 3160 mg/kg (rat) **Ecotoxicity Data:** This product is expected to be of low toxicity. **Biodegradation/bioaccumulation:** Not expected to bioaccumulate. **OCNS category and registration number E - 28127**	0.12%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
MEG	Newpark	Agent to free differentially stuck pipe	**Toxicology Data:** LC50 (inhalation) 10 876 mg/kg (rat) LD50 (ingestion) 1650 mg/kg (cat) LD50 (skin) 9530 ug/kg (rabbit) LDLo (ingestion) 398 mg/kg (human) TCLo (inhalation) 10,000 mg/m³ (human - cough) TDLo (ingestion) 5500 mg/kg (child - anaesthesia) **Ecotoxicity Data:** Algae/aquatic plants - 6500 - 13000: 96 h Pseudokirchneriella subcapitata mg/L EC50 Fish - 14 - 18: 96 h Oncorhynchus mykiss mL/L LC50 static 40000 - 60000: 96h Pimephales promelas mg/L LC50 static 16000: 96h Poecilia reticulate mg/L LC50 static 27540: 96h Lepomis macrochirus mg/L LC50 static 40761: 96h Oncorhynchus mykiss mg/L LC50 static 41000: 96h Oncorhynchus mykiss mg/L LC50 Crustacea - 46300: 48 h Daphnia magna mg/L EC50 **Biodegradation/bioaccumulation:** Partition coefficient - -1.93	0.40%	Y
Microflow	Newpark	Stimulation Additive	**CONSTITUENT 1 – (20-60%)** **Toxicology Data:** Oral LD50 in mice of 3600 mg/kg **CONSTITUENT 2 – (15-50%)** **Toxicology Data:** Oral LD50 - > 2000 mg/kg (rat) (NICNAS) Dermal LD50 - > 2000 mg/kg (rat) (NICNAS) Inhalation LC50 - > 20 mg/L (rat) (NICNAS) **Ecotoxicity Data:** Not expected to be dangerous to the aquatic environment. **Biodegradation/bioaccumulation:** This product is readily biodegradable. This product is not expected to bioaccumulate.	0.03%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
NDFT 376 / 377 – Dynafiber AP Fine/Medium	Newpark	Prevent lost circulation	**Toxicology Data:** Oral LD50 - > 5000 mg/kg (rat) Dermal LD50 - > 2000 mg/kg (rabbit) Inhalation LC50 - > 5800 mg/m³/4 hours (rat) **Ecotoxicity Data:** No information available. **Biodegradation/bioaccumulation:** No information available.	0.12%	Y
Quickseal M/C	Newpark	LCM / Well Bore Strengthening	**Toxicology Data:** LD50 (oral) > 5000 mg/kg (rats). LD50 (dermal) > 2000 mg/kg (rats). LC50 (Inhalation) = 5800 mg/m3/4hrs (rat). LD50 (intraperitoneal) > 31600 mg/kg (rat) This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated **Ecotoxicity Data:** Low toxicity to aquatic organisms. **Biodegradation/bioaccumulation:** This product is readily biodegradable. This product is not expected to bioaccumulate.	0.22%	Y
Salt (Sodium Chloride all grades)	Newpark	Weighting Agent	**Toxicology Data:** LC50 (Inhalation): > 42000 mg/m3/1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Skin): > 10000 mg/kg (rabbit LD50 (intraperitoneal) 2602 mg/kg (mouse) LD50 (intravenous) 645 mg/kg (mouse) LD50 (subcutaneous) 3000 mg/kg (mouse) LDLo (intravenous) 300 mg/kg (guinea pig) LDLo (oral) 8000 mg/kg (rabbit) LDLo (subcutaneous) 2160 mg/kg (guinea pig) TDLo (oral) 12357 mg/kg (human) **Ecotoxicity Data:**	4.81%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LC50 (water flea) is 2122 mg/L/48 hours; LC50 (fathead minnow) is 6.57 g/L/96 hours. This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. **Biodegradation/bioaccumulation:** Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.		
Sandseal Fine	Newpark	LCM	**Toxicology Data:** This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects **Ecotoxicity Data:** No information available. **Biodegradation/bioaccumulation:** No information available.	0.10%	Y
SAPP	Newpark	Deflocculate or disperse bentonite muds or fluids with high levels of low gravity solids.	**Toxicology Data:** LD50 (Ingestion): 2650 mg/kg (mouse) LD50 (Intraperitoneal): 1 g/kg (mouse) LD50 (Intravenous): 59 mg/kg (mouse) LD50 (Subcutaneous): 480 mg/kg (mouse) **Ecotoxicity Data:** No information available. **Biodegradation/bioaccumulation:** Biodegradability does not pertain to inorganic substances. Does not bioaccumulate. **OCNS category and Registration number. E- 28106**	0.08%	Y
SPA	Newpark	HT Fluid Loss Additive	**Toxicology Data:** This product is expected to be of low toxicity. Based on available data, the classification criteria are not met. **Ecotoxicity Data:** (10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2 mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L.	0.06%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg] **Biodegradation/bioaccumulation:** No information available.		
Strata-Vanguard	Newpark	Specialist LCM	**Acute Toxicity**: This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. **CONSTITUENT 1 – (<5%)** **Toxicology Data:** TCLo (inhalation) 16 mppcf/8hours/17.9 years (human fibrosis). **CONSTITUENT 2 – (<2%)** **Toxicology Data:** LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis). **CONSTITUENT 3 – (<50%)** **Toxicology Data:** LC50 (96 h): >100 mg/L (Oncorhynchus mykiss) LC50 (48 h): >100 mg/L (Daphnia Magna) LC50 (48 h): >100 mg/L (Scenedesmus quadricauda) **CONSTITUENT 4 – (<50%)** **Toxicology Data:** It is not anticipated to cause adverse environmental effects. **CONSTITUENT 5 – (<50%)** **Toxicology Data:** General-purpose rubber used to replace natural rubber Acute Oral LD50 : >2000mg/kg (Rat, LIR-30) Acute Dermal Irritation (Rabbit) : Negative (LIR-30) Acute Inhalation LC50 : Not Available SBR Elastomers as an ingredient (<50%) LD50 (Oral) >5000 mg/kg (rat) LD50 (skin) >20000 mg/kg (rat) LD50 (inhalation) >20000 mg/kg (rat) **CONSTITUENT 6 – (<30%)** **Toxicology Data:** LC50 (inhalation) > 5800 mg/m³/4 hours (rat)	0.36%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LD50 (ingestion) > 5000 mg/kg (rat) LD50 (intraperitoneal) > 31600 mg/kg (rat) LD50 (skin) > 2000 mg/kg (rabbit). **CONSTITUENT 7 – (<15%)** **Toxicology Data:** LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis). **CONSTITUENT 8 – (<10%)** **Toxicology Data:** Fish Toxicity 96h LC50: 8-19 g/L (Salmo gairdneri). **CONSTITUENT 9 – (<10%)** **Toxicology Data:** Calcium carbonate occurs naturally in a wide variety of substances including limestone, marble and egg shells. It is not anticipated to cause adverse environmental effects. **CONSTITUENT 10 – (<3%)** **Toxicology Data:** LDLo (ingestion) 3000 mg/kg (rat) **CONSTITUENT 11 – (<1%)** **Toxicology Data:** TCLo (inhalation) 400 mg/kg (human) **Ecotoxicity Data:** This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. **Biodegradation/bioaccumulation:** This product is not expected to bioaccumulate. This product has low mobility in soil.		
TEA	Newpark	Polymer stabiliser which effectively reduces the degradation of polymers at high temperatures	**CONSTITUENT 1 (>60%)** **Toxicology Data:** Oral Toxicity (LD50): 2,200 mg/kg (rabbit), 4,190 mg/kg (rat) Dermal Toxicity (LD50) > 20 mL/kg (rabbit), >20,000 mg/kg (rabbit) LD50 (intraperitoneal) 1,450 mg/kg (mouse) TDLo (oral) 16 g/kg/64 weeks (mouse - cancer) **CONSTITUENT 2 (10 - 30%)** **Toxicology Data:** Oral Toxicity (LD50): 780 mg/kg (rat) Dermal LD50: 11.9 mL/kg (rabbit)	0.10%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LD50 (intramuscular) 1500 mg/kg (rat) LD50 (intraperitoneal) 120 mg/kg (rat) LD50 (intravenous) 778 mg/kg (rat) LD50 (subcutaneous) 2200 mg/kg (rat) LDLo (oral) 3 g/kg (rat) **CONSTITUENT 1 (>60%)** **Ecotoxicity Data:** Toxiciy to algae/aquatic plants: EC50: =169mg/L (96h,Desmodesmus subspicatus) EC50: =216mg/L (72h, Desmodesmus subspicatus).Toxicity to Fish: LC50: 10600 - 13000mg/L (96h, Pimephales promelas). LC50: 450 – 1000 mg/L (96h, Lepomis macrochirus) LC50: >1000mg/L (96h, Pimephales promelas) **CONSTITUENT 2 (10 - 30%)** **Ecotoxicity Data:** Toxiciy to algae/aquatic plants: EC50: 2.1 - 2.3 mg/L (96h, Pseudokirchneriella subcapitata) EC50: =7.8mg/L (72h, Desmodesmus subspicatus). Toxicity to Fish: LC50: 1200 – 1580 mg/L (96h, Pimephales promelas) LC50: 4460 – 4980 mg/L (96h, Pimephales promelas) LC50: 600 – 1000 mg/L (96h, Lepomis macrochirus) Toxicity to Micro-organisms: EC50 = 73 mg/L 5 min EC50 > 16 mg/L 16 h Toxicity to Crustacea: EC50: =55 mg/L (48h, Daphnia magna) **Biodegradation/bioaccumulation:** No bioaccumulation information available. Component 2 = 28 days – Value 93% - Results: Readily biodegradable. No sensitization, reproductive or mutagenic effects known. Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis). Hazard Classification : Carcinogenicity – Category 2.		
Thinpol	Newpark	Liquid dispersant	**CONSTITUENT 1 (30-60%)** **Toxicology Data:** This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated	0.10%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Oral Toxicity LD50 - 2500 mg/kg (rat) LD50 (intraperitoneal) 39 mg/kg (mouse) LD50 (intravenous) 70 mg/kg (mouse) **CONSTITUENT 2 (<100%)** **Toxicology Data:** Non-hazardous ingredient. **Ecotoxicity Data:** (10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000mg/Kg] **Biodegradation/bioaccumulation:** No information available.		
TrueScav HD	Newpark	Oxygen Scavenger Non-sulphur based,	**Toxicology Data:** Oral LD50 > 5 g/kg (Rat) **Ecotoxicity Data:** No information available. **Biodegradation/bioaccumulation:** No information available.	0.03%	y
Victosal NS	Newpark	Modified Starch	**Toxicology Data:** This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. **Ecotoxicity Data:** This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. **Biodegradation/bioaccumulation:** No information available.	0.06%	Y
Zinc Oxide	Newpark	H2S Scavenger	**Toxicology Data:** LD50 (Oral): 7950 mg/kg (mouse)	0.16%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LC50 (Inhalation): 2500 mg/m³ (mouse) LD50 (intraperitoneal) 240 mg/kg (rat) LDLo (oral) 500 mg/kg (human) TCLo (inhalation) 600 mg/m³ (human) **Ecotoxicity Data:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. **Biodegradation/bioaccumulation:** This product is not readily biodegradable.		
Hydrochloric Acid	Coogee Chemicals	pH Control	Constituent 1 as an ingredient 32% - Hydrochloric Acid **Acute Toxicity:** LD50 dermal (mouse): 1,449 mg/kg LD50 oral (rat): 900 mg/kg LC50 inhalation (rat): 4.2-4.7 mg/L/1h Irritation eye (rabbit): 5mg/30s mild Fish LC50 (96h): 334.734 mg/L Fish EC50(ECx) (9.33h): 0.51 mg/L Constituent 2 as an ingredient 68% - Water **Acute Toxicity:** LD50 oral (rat): >90,000 mg/kg **Chronic Toxicity:** No known carcinogenic, chronic, mutagenic or reproductive effects for this product. Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. **Mobility:** Low	0.07%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Biodegradation/bioaccumulation: Low		
Rodine 85	Henkel	Acid Inhibitor	Acute Toxicology and Ecotoxicity Data: **Component 1 (<10%)** LD50 oral: 56.4 mg/kg (rat) LC50 (96h) 4.6 mg/L *Leuciscus idus* (fish) EC50 (24h) 11 mg/L *Daphnia magna* (freshwater invertebrate) EC50 (8d) >18 mg/L *Scenedesmus quadricauda* (algae) **Component 2 (<5%)** LD50 oral: 930 mg/kg (mouse) LD50 dermal: >1,000 - <2,000 mg/kg (rat) EC50 (48h) 56 mg/L *Daphnia magna* (freshwater invertebrate) **Component 3 (<30%)** Acute toxicity estimate: oral: 300 mg/kg LC50 (96h) *P. promelas* 24 mg/L (fish) LC50 (96h) *D. rerio* 41 mg/L (fish) EC50 (48h) *Daphnia magna* ~2 mg/L (freshwater invertebrate) **Component 4 (60%)** Water **Biodegradation/bioaccumulation:** Degradability: Component 1 37%, Component 2 3%, Component 3 97% Bioaccumulative potential: Comp. 1 Log Kow -0.35, Comp. 2 LogKow 0.57, Comp. 3 LogPow <1 Germ cell mutagenicity: positive for Component 2. Carcinogenicity: Category 2 for Component 3.	0.0143%	Y
Acetic Acid	Newpark	Chelating agent	Acute Toxicity: EC50 (72h) 55.22 mg/L Anabaena (algae) LC50 (96h) 75 mg/L Lepomis macrochirus (fish) LC50 (96h) 251 mg/L Gambusia affinis (fish) EC50 (48h) 65 mg/L Daphnia magna (freshwater invertebrate) Chronic Toxicity: No known carcinogenic, chronic, mutagenic or reproductive effects for this product. Biodegradation/bioaccumulation: Readily biodegradable (99% @ 7d). Log Kow -0.17 The product is not known to be Bioaccumulative.	0.003%	Y

*** Shaded products are contingent**

NEWPARK FLUIDS SYSTEMS

BuruEnergy

Table C Ingredients

Chemicals Name	CAS number	**Mass fraction (%)**
Water	7732-18-5	76.24%
Polyvinylalcohol	9002-89-5	2.12%
Bentonite	1302-78-9	0.35%
Potassium Chloride	7447-40-7	8.04%
Potassium Silicate	1312-76-1	0.44%
Calcium Carbonate	471-34-1	0.00%
Sodium Chloride	7647-14-5	0.00%
Barium Sulphate	7727-43-7	7.76%
Sodium carboxymethy Cellulose	9004-32-4	0.88%
Magnesium Oxide	1309-48-4	0.17%
Calcium Oxide	1305-78-8	0.006%
Silicon Dioxide	7631-86-9	0.005%
Organic Fiber(s)	9004-34-6	0.44%
Sodium Glycolate	2836-32-0	0.006%
Xanthan Gum	11138-66-2	0.59%
Quartz (Silica Crystalline)	14808-60-7	0.27%
Sodium Hydroxide	1310-73-2	0.11%
Sodium Carbonate	497-19-8	0.11%
Sodium Sulphite	7757-83-7	0.37%
Sodium Sulphate	7757-82-6	0.01%
Sodium Bicarbonate	144-55-8	0.04%
Citric Acid, Anhydrous	77-92-9	0.04%
Polyethylene Glycol	25322-68-3	0.05%
OCTAN-2-OL	123-96-6	0.04%
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	55566-30-8	0.03%
TOTAL		**100.00%**
DRILLING MUD		100%
FATTY ACID	67701-03-5	0.04%
METHYL ESTERS OF FATTY ACIDS	68990-52-3	0.64%
HEXANEDINITRILE, HYDROGENATED, HIGH-BOILING FRACTION	68411-90-5	0.38%
Hydrochloric acid	7647-01-0	0.14%
BARIUM SULPHATE	7727-43-7	7.10%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	0.24%
CALCIUM CARBONATE	471-34-1	0.18%
CALCIUM CHLORIDE ANHYDROUS	10043-52-4	0.08%
POLYETHYLENE GLYCOL	25322-68-3	0.03%
OCTAN-2-OL	123-96-6	0.02%
POLYPROPYLENE GLYCOL	25322-69-4	0.05%
POTASSIUM SILICATE	1312-76-1	0.16%
CELLULOSE	9004-34-6	0.40%
CARBOXYMETHYL STARCH	9057--06-1	0.06%
D-GLUCURONO-6-DEOXY-L-MANNO-D-GLUCAN,ACETATE, CALCIUM MAGNESIUM POTASSIUM SODIUM SALT	595585-15-2	0.03%
ACRYLAMIDE, SODIUM ACRYLATE COPOLYMER	25085-02-3	0.07%
MAGNESIUM OXIDE	1309-48-4	0.11%
CALCIUM OXIDE	1305-78-8	0.01%
SILICON DIOXIDE	7631-86-9	0.003%
ETHYLENE GLYCOL	107-21-1	0.40%
SWEET ORANGE OIL	68647-72-3	0.01%
ISOPROPYL ALCOHOL	67-63-0	0.01%
ORGANIC FIBRE(S)	9004-34-6	0.13%
SODIUM CHLORIDE	7647-14-5	4.72%
VEGETABLE MATERIALS	100209-45-8	0.10%

Chemicals Name	CAS number	**Mass fraction (%)**
DISODIUM PYROPHOSPHATE	7758-16-9 231-	0.08%
2-PROPENOIC ACID, HOMOPOLYMER	9003-01-4	0.045%
NATURAL RUBBER	9006 -- 04 --6	0.18%
POLYISOPRENE	9003-31-0	0.018%
FULLERS EARTH	8031-18-3	0.036%
DIATOMACEOUS EARTH, FLUX CALCINED	68855-54-9	0.055%
CRISTOBALITE	14464-46-1	0.018%
POLYETHYLENE	9002-88-4	0.011%
TRIETHANOLAMINE	102-71-6	0.090%
DIETHANOLAMINE	111-42-2	0.021%
SODIUM ERYTHORBATE	6381-77-7	0.026%
MODIFIED STARCH	9005-25-8	0.060%
ZINC OXIDE	1314-13-2	0.159%
HYDROCHLORIC ACID	7647-01-0	0.02%
ACETIC ACID	64-19-7	0.003%
Formaldehyde polymer with o-toluidinium chloride	68492-82-0	0.0043%
prop-2-yn-1-ol	107-19-7	0.000715%
1,3-Diethyl-2-thiourea	105-55-5	0.00143%
methanol	67-56-1	0.0086%

NEWPARK FLUIDS SYSTEMS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ACETIC ACID**

Synonyms ACETIC ACID 56% SOLUTION

1.2 Uses and uses advised against

Uses LABORATORY REAGENT ● MANUFACTURE OF CHEMICALS

1.3 Details of the supplier of the product

Supplier name **NEWPARK FLUIDS SYSTEMS**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Flammable Liquids: Category 4
Corrosive to Metals: Category 1

Health Hazards

Acute Toxicity: Skin: Category 4
Skin Corrosion/Irritation: Category 1B
Serious Eye Damage / Eye Irritation: Category 1

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H227	Combustible liquid.
H290	May be corrosive to metals.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Prevention statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234	Keep only in original packaging.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use appropriate media to extinguish.
P390	Absorb spillage to prevent material damage.

Storage statements

P403	Store in a well-ventilated place.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ACETIC ACID	64-19-7	200-580-7	50 to 60%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe burns.

4.3 Immediate medical attention and special treatment needed

CORROSIVE POISONING TREATMENT: Immediate treatment preferably in a hospital is mandatory. It is also important to attempt to discover the chemical substances ingested. In treating corrosive poisoning, DO NOT INDUCE VOMITING; DO NOT ATTEMPT GASTRIC LAVAGE; and DO NOT ATTEMPT TO NEUTRALISE THE CORROSIVE SUBSTANCE. Vomiting will increase the severity of damage to the oesophagus as the corrosive substance will again come in contact with it. Attempting gastric lavage may result in perforating either the oesophagus or stomach. Immediately dilute the corrosive substance by having the patient drink milk or water. If the trachea has been damaged tracheostamy may be required. For oesophageal burns begin broad-spectrum antibiotics and corticosteroid therapy. Intravenous fluids will be required if oesophageal or gastric damage prevents ingestion of liquids. Long-range therapy will be directed toward preventing or treating oesophageal scars and strictures.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide or water fog. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve toxic gases (acetic acid, hydrocarbons, carbon oxides) when heated to decomposition. Vapour may form explosive mixtures with air.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
2R

2 Fine Water Spray.

R Wear liquid-tight chemical protective clothing and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with sodium carbonate or similar, collect and place in suitable containers for treatment and/or disposal. Eliminate all sources of ignition.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store tightly sealed in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should be bunded and have appropriate fire protection and ventilation systems.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Acetic acid	SWA [AUS]	10	25	15	37

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear nitrile or neoprene gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. At high vapour levels, wear an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR COLOURLESS LIQUID
Odour	PUNGENT ODOUR
Flammability	CLASS C1 COMBUSTIBLE
Flash point	85°C
Boiling point	102°C
Melting point	-24°C
Evaporation rate	NOT AVAILABLE
pH	1 (Neat)
Vapour density	2 (Air = 1)
Relative density	1.06
Solubility (water)	SOLUBLE
Vapour pressure	17 kPa
Upper explosion limit	16 %
Lower explosion limit	4 %
Partition coefficient	NOT AVAILABLE
Autoignition temperature	465°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

May be corrosive to metals.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), alkalis (e.g. sodium hydroxide), acetaldehyde, phosphorus trichloride, potassium t-butoxide, heat and ignition sources. Incompatible with metals.

10.6 Hazardous decomposition products

May evolve toxic gases (acetic acid, hydrocarbons, carbon oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Ingestion may result in severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ACETIC ACID	3310 mg/kg (rat)	1.06 g/kg (rabbit)	5620 ppm/1 hour

Skin Causes severe burns. Contact may result in irritation, redness, pain, rash, dermatitis and severe burns. Effects may be delayed.

Eye Causes severe burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible serious eye damage.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, coughing and bronchitis. High level exposure may result in ulceration of the respiratory tract, lung tissue damage, chemical pneumonitis and pulmonary oedema. Effects may be delayed.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. Adverse effects are generally associated with single exposure. However, repeated exposure may result in darkening of the skin, erosion of the tooth enamel, and damage to the respiratory system.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Environmental effects depend on the concentration and duration of exposure to acetic acid. In high concentrations it can be harmful to plants, animals and aquatic life.

12.2 Persistence and degradability

Acetic acid is expected to rapidly degrade.

12.3 Bioaccumulative potential

Acetic acid does not bioaccumulate or contaminate the food chain.

12.4 Mobility in soil

Soluble in water.

12.5 Other adverse effects

Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Wearing protective equipment detailed above, and ensuring any ignition sources are eliminated, absorb with sodium carbonate - sodium bicarbonate, collect and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	2790	2790	2790
14.2 Proper Shipping Name	ACETIC ACID SOLUTION, more than 10% but not more than 80% acid, by mass	ACETIC ACID SOLUTION, more than 10% but not more than 80% acid, by mass	ACETIC ACID SOLUTION, more than 10% but not more than 80% acid, by mass
14.3 Transport hazard class	8	8	8
14.4 Packing Group	II	II	II

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code 2R

GTEPG 8A1

EmS F-A, S-B

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

ACIDS: When mixing acids with water (diluting), caution must be taken as heat will be generated which causes violent spattering. Always add a small volume of acid to a large volume of water, NEVER the reverse.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ANCOR 1**

Synonyms CORROSION INHIBITOR

1.2 Uses and uses advised against

Uses BRINE ● CORROSION INHIBITOR ● DRILLING FLUID ADDITIVE ● OIL AND GAS INDUSTRY

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H319 Causes serious eye irritation.

Prevention statements

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/attention.

Storage statements
None allocated.

Disposal statements
None allocated.

2.3 Other hazards
No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
TRIETHANOLAMINE	102-71-6	203-049-8	68 to 72%
NON HAZARDOUS INGREDIENTS	Not Available	Not Available	28 to 32%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
Over exposure may result in irritation to the eyes, nose and respiratory system. May cause allergic contact dermatitis.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Triethanolamine	SWA [AUS]	--	5	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS LIQUID
Odour	SLIGHT ODOUR
Flammability	CLASS C2 COMBUSTIBLE
Flash point	> 100°C
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	1.1
Solubility (water)	SOLUBLE

9.1 Information on basic physical and chemical properties

Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Hazardous polymerisation is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), nitrites, heat and ignition sources.

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

May be harmful if swallowed, in contact with skin, and/or if inhaled.
Toxicity Data available for the ingredient:
TRIETHANOLAMINE (102-71-6):
LD50 (Ingestion): 2200 mg/kg (rabbit)
LD50 (Intraperitoneal): 1450 mg/kg (mouse)
LD50 (Skin): > 20 mL/kg (rabbit)
TDLo (Ingestion): 16 g/kg/64 weeks (mouse - cancer)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
TRIETHANOLAMINE	6400 mg/kg (rat)	> 2000 mg/kg (rabbit)	--

Additional ingredient toxicity values:

TRIETHANOLAMINE (102-71-6)
LD50 (intraperitoneal) 1450 mg/kg (mouse)
TDLo (oral) 16 g/kg/64 weeks (mouse - cancer)

Skin Contact may result in irritation, redness and rash.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Triethanolamine has been reported to cause allergic contact dermatitis. It is not known to cause respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Triethanolamine is not classifiable as to its carcinogenicity to humans (IARC Group 3). Considering the animal studies conducted, there is no evidence of carcinogenicity through the oral route and equivocal evidence of carcinogenicity through the dermal route. The available data do not warrant hazard classification.

Reproductive Not classified as a reproductive toxin.

STOT - single Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.

exposure

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (shrimp): > 100 ppm.

12.2 Persistence and degradability

In soil and water, triethanolamine will biodegrade fairly rapidly following acclamation (half-life in the order of days to weeks).

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

In soil, residual triethanolamine may leach to groundwater.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reduce with sodium thiosulphate/ bisulphite (not strong reducing agent), acidify with 3M sulphuric acid. Scoop into a container of water and neutralise with soda ash. Absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **CALCIUM CARBONATE**

Synonyms ABGRIT ● CIRCAL ● LIMESTONE ● MARBLE ● NEWCARB, AG LIMESTONE, UNICAL 20 ● OMYACARB ● STONEDUST ● TRUECARB

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE ● WEIGHTING AGENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
LIMESTONE (CALCIUM CARBONATE)	1317-65-3	215-279-6	>96%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
May cause irritation to the eyes, skin and respiratory system.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters
No fire or explosion hazard exists.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
If spilt, collect and reuse where possible. If reuse is not possible, contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Calcium carbonate (Limestone, Marble, Whiting)	SWA [AUS]	--	10	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	When using large quantities or where heavy contamination is likely, wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OFF-WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	840°C (Decomposes)
Melting point	825°C
Evaporation rate	NOT AVAILABLE
pH	9
Vapour density	NOT AVAILABLE
Relative density	2.7
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Calcium carbonate reacts with acids and acidic salts to generate gaseous carbon dioxide with effervescence (bubbling). The reaction with concentrated solutions of acids is rapid and exothermic. The effervesence can create extensive foaming. Ignites on contact with fluorine.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid), fluorine, aluminium (hot) and ammonium salts. Incompatible with oxidising agents (e.g. hypochlorites).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low toxicity. Based on available data, the classification criteria are not met. LD50 (Ingestion) = 6450 mg/kg (rat).

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
LIMESTONE (CALCIUM CARBONATE)	> 5000 mg/kg (rat)	--	--

Skin Not classified as a skin irritant. Contact may result in mild irritation, redness and rash.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. Chronic exposure to respirable silica may result in pulmonary fibrosis (silicosis). However, given the low levels present, over exposure is not anticipated.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Calcium carbonate occurs naturally in a wide variety of substances including limestone, marble and egg shells. It is not anticipated to cause adverse environmental effects.

12.2 Persistence and degradability

Dissolved calcium carbonate dissociates into calcium and carbonate ions. Calcium ions will be assimilated by living organisms in the water and the carbonate will become part of the carbon cycle.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

Due to its limited solubility, calcium carbonate precipitates and deposits on the sediment.

12.5 Other adverse effects

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

EXPOSURE CONTROL: If utilised in a closed system the potential for over exposure is reduced. If not used in a closed system, local exhaust ventilation is recommended to control exposure. Provide eye wash and safety shower in close proximity to points of potential exposure. Where the potential for an inhalation risk exists, an approved respirator may be required. Do not eat, store, consume food, tobacco or drink in areas where product is used.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **CALCIUM CHLORIDE POWDER 94-97%**

Synonyms CALCIUM CHLORIDE ANHYDRATE

1.2 Uses and uses advised against

Uses CONCRETE CONDITIONER ● DESICCANT ● DUST CONTROL AGENT ● FOOD ADDITIVE ● INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H319 Causes serious eye irritation.

Prevention statements

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/attention.

Storage statements
None allocated.

Disposal statements
None allocated.

2.3 Other hazards
No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CALCIUM CHLORIDE ANHYDROUS	10043-52-4	233-140-8	94 to 97%
SODIUM CHLORIDE	7647-14-5	231-598-3	1 to 5%
WATER	7732-18-5	231-791-2	1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
Irritating to the eyes.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (chlorides) when heated to decomposition.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 1600°C
Melting point	772°C
Evaporation rate	NOT RELEVANT
pH	7.0 to 9.0
Vapour density	NOT AVAILABLE
Relative density	2.15
Solubility (water)	590 kg/m³ (Approximately)
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid contact with incompatible substances.

10.5 Incompatible materials
Incompatible with acids (e.g. nitric acid), methyl vinyl ether, zinc/ galvanised metals, bromine trifluoride, boron oxide and calcium oxide. May react exothermically with water (i.e. releasing heat).

10.6 Hazardous decomposition products
May evolve toxic gases (chlorides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met. Toxicity Data available for the ingredients:
CALCIUM CHLORIDE ANHYDROUS (10043-52-4):
LD50 (Ingestion): 1000 mg/kg (rat)
LD50 (Intraperitoneal): 210 mg/kg (mouse)
LD50 (Intravenous): 42 mg/kg (mouse)
LD50 (Subcutaneous): 823 mg/kg (mouse)
LDLo (Ingestion): 1384 mg/kg (rabbit)
LDLo (Intravenous): 150 mg/kg (guinea pig)
LDLo (Subcutaneous): 249 mg/kg (cat)
TDLo (Intravenous): 20 mg/kg/1 hour (woman)
SODIUM CHLORIDE (7647-14-5):
LC50 (Inhalation): > 42000 mg/m3/1 hour (rat)
LD50 (Ingestion): 3000 mg/kg (rat)
LD50 (Intraperitoneal): 2602 mg/kg (mouse)
LD50 (Intravenous): 645 mg/kg (mouse)
LD50 (Skin): > 10000 mg/kg (rabbit)
LD50 (Subcutaneous): 3000 mg/kg (mouse)
LDLo (Ingestion): 8000 mg/kg (rabbit)
LDLo (Intravenous): 300 mg/kg (guinea pig)
LDLo (Subcutaneous): 2160 mg/kg (guinea pig)
TDLo (Ingestion): 12357 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CALCIUM CHLORIDE ANHYDROUS	2301 mg/kg (rat)	> 5000 mg/kg (rabbit)	--
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m³/1 hour (rat)

Additional ingredient toxicity values:

SODIUM CHLORIDE (7647-14-5)

LD50 (intraperitoneal)	2602 mg/kg (mouse)
LD50 (intravenous)	645 mg/kg (mouse)
LD50 (subcutaneous)	3000 mg/kg (mouse)
LDLo (intravenous)	300 mg/kg (guinea pig)
LDLo (oral)	8000 mg/kg (rabbit)
LDLo (subcutaneous)	2160 mg/kg (guinea pig)
TDLo (oral)	12357 mg/kg (human)

Skin Not classified as a skin irritant. Contact may result in mechanical irritation, redness and rash.

Eye Causes serious eye irritation. Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No information provided.

12.2 Persistence and degradability
Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential
This product does not bioaccumulate.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **CAUSTIC SODA**

Synonyms SODIUM HYDROXIDE SOLID

1.2 Uses and uses advised against

Uses MANUFACTURE OF CHEMICALS ● REAGENT ● SCRUBBING AGENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Skin Corrosion/Irritation: Category 1A
Serious Eye Damage / Eye Irritation: Category 1

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Prevention statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P363	Wash contaminated clothing before reuse.

Storage statements

P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM HYDROXIDE	1310-73-2	215-185-5	>99%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator where an inhalation risk exists. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage.

4.3 Immediate medical attention and special treatment needed

CORROSIVE POISONING TREATMENT: Immediate treatment preferably in a hospital is mandatory. In treating corrosive poisoning, DO NOT INDUCE VOMITING; DO NOT ATTEMPT GASTRIC LAVAGE; and DO NOT ATTEMPT TO NEUTRALISE THE CORROSIVE SUBSTANCE. Vomiting will increase the severity of damage to the oesophagus as the corrosive substance will again come in contact with it. Attempting gastric lavage may result in perforating either the oesophagus or stomach. Immediately dilute the corrosive substance by having the patient drink milk or water. If the trachea has been damaged tracheostamy may be required. For oesophageal burns begin broad-spectrum antibiotics and corticosteroid therapy. Intravenous fluids will be required if oesophageal or gastric damage prevents ingestion of liquids. Long-range therapy will be directed toward preventing or treating oesophageal scars and strictures.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire. Use carbon dioxide or suitable dry chemical extinguisher. Do NOT use water.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve flammable hydrogen gas in contact with some metals. Direct contact with water can produce a violent exothermic reaction.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

2X

2 Fine Water Spray.

X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Allow only trained personnel wearing appropriate protective equipment to be involved in spill response. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Mechanically collect as much of the spill as possible. Absorb with sand, earth or clay. Transfer to suitable, labelled, corrosion-resistant containers and dispose of promptly as hazardous waste. Spill on areas other than pavement, dirt or sand may be handled by removing the affected soils and placing into approved containers.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Do not smoke, eat or drink when handling product. Product can react violently with water and acids. Caustic solution generates heat when further diluted with water. Concentrations greater than 40%, the heat generated can raise temperatures above the boiling point resulting in sporadic, violent eruptions or spattering. Emergency showers and eye-washes must be available. When used in its various applications, the product must be prevented from coming into uncontrolled direct contact with other products such as acids and metals. Never neutralise the solid product.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Store away from aluminium, tin, zinc and alloys (bronzes), chrome and lead. Protect from damp and kept apart from acids, halogenated hydrocarbons, nitroparaffins, etc. The floor must be waterproof and anti-slip. A water supply or source must be provided in the place of storage. Emergency showers and eye-washes must be available. Special conditions: Prevent the product from becoming damp or erated. Hygroscopic product. Becomes carbonated in contact with the air or moisture.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Sodium hydroxide (peak limitation)	SWA [AUS]	--	2 (Peak)	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear a faceshield and dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls and rubber boots and a PVC apron.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear an Air-line respirator or a Full-face Class P3 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE DELIQUESCENT PEARLS
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1390°C
Melting point	318°C
Evaporation rate	NOT AVAILABLE
pH	13.5 (1 % solution)
Vapour density	NOT AVAILABLE
Relative density	2.12
Solubility (water)	1110 kg/m³ @ 20°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Highly exothermal reaction with strong acids. Reacts dangerously with acetic acid, allyl chloride, chlorine trifluoride, chloroform, methylic alcohol, chloronitrotoluene, chlorosulphonic acid, glyoxal, cyanohydrin, hydrochloric acid, hydrofluoric acid, hydroquinone, nitric acid, sulphuric acid and oleum, nitropropane, phosphorous, propiolactone, phosphorous pentoxide, tetrachlorobenzene, tetrahydrofuran, etc. Caustic soda forms salts with nitromethane and nitroparaffins that explode on impact. Heat is generated when mixed with water. Spattering and boiling can occur. Caustic soda solution reacts readily with various reducing sugars (ie: fructose, glactose, maltose, dry whey solids) to produce carbon monoxide. Caustic soda forms salts with nitromethane and nitroparaffins that explode on impact. Reacts with aluminium, tin, zinc and their alloys, copper, lead, etc. giving off hydrogen.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), metals, heat and ignition sources.

10.6 Hazardous decomposition products

Reacts with aluminium, tin, zinc and their alloys, copper, lead, etc. giving off hydrogen. When the product decomposes, toxic sodium oxide gases are evolved.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Highly corrosive. This product has the potential to cause serious adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Over exposure may result in severe burns with corrosive tissue damage. Upon dilution, the potential for corrosive effects may be reduced.

SODIUM HYDROXIDE (1310-73-2):
LD50 (Intraperitoneal): 40 mg/kg (mouse)
LDLo (Ingestion): 1.57 mg/kg (human)

Additional ingredient toxicity values:

SODIUM HYDROXIDE (1310-73-2)

LD50 (intraperitoneal)	40 mg/kg (mouse)
LDLo (oral)	500 mg/kg (rabbit)

Skin

Causes severe burns. Contact may result in irritation, redness, pain, rash, dermatitis and skin burns.

Eye

Causes severe burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible serious eye damage.

Sensitisation

Not classified as causing skin or respiratory sensitisation.

Mutagenicity

Insufficient data available to classify as a mutagen. Both the in vitro and the in vivo genetic toxicity tests indicated no evidence of mutagenic activity. Furthermore the substance is not expected to be systemically available in the body under normal handling and use conditions and for this reason additional testing is considered unnecessary (EU RAR, 2007).

Carcinogenicity

Not classified as a carcinogen. Insufficient data available to classify as a carcinogen. Systemic carcinogenicity is not expected to occur because the substance is not expected to be systemically available in the body under normal handling and use conditions.

Reproductive

Not classified as a reproductive toxin. Insufficient data available to classify as a reproductive toxin. The substance is not expected to be systemically available in the body under normal handling and use conditions and for this reason it can be stated that the substance will not reach the foetus nor reach male and female reproductive organs. The substance is not expected to be systemically available in the body under normal handling and use conditions and for this reason additional testing is considered unnecessary.

STOT - single exposure

Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.

STOT - repeated exposure

Not classified as causing organ damage from repeated exposure.

Aspiration

This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

EC50 Ceriodaphnia: 40 mg/L.

No other valid studies available. The hazard of NaOH for the environment is caused by the hydroxyl ion (pH effect). For this reason the effect of NaOH on the organisms depends on the buffer capacity of the aquatic or terrestrial ecosystem (see also 3.1.2). Also the variation in acute toxicity for aquatic organisms can be explained for a significant extent by the variation in buffer capacity of the test medium. LC50 values ranged between 33 and 189 mg/L.

12.2 Persistence and degradability

Readily biodegradable. NaOH is a strong alkaline substance that dissociates completely in water to Na+ and OH-. High water solubility and low vapour pressure indicate that NaOH will be found predominantly in aquatic environment. This implies that it will not adsorb on particulate matter or surfaces. Atmospheric emissions as aerosols are rapidly neutralized by carbon dioxide and the salts will be washed out by rain.

12.3 Bioaccumulative potential

Does not bioaccumulate. Considering its high water solubility, NaOH is not expected to bioconcentrate in organisms. In addition, sodium is a naturally-occurring element that is prevalent in the environment and to which organisms are exposed regularly, for which they have some capacity to regulate the concentration in the organism.

12.4 Mobility in soil

High water solubility and mobility

12.5 Other adverse effects

WATER: If released to waterways, alkaline products may change the pH of the waterway. Fish will die if the pH reaches 10-11 (goldfish 10.9, bluegill 10.5). SOIL: May leach to groundwater with toxic effects on aquatic life as above. ATMOSPHERE: Not expected to reside in the atmosphere. Drops or particles released to atmosphere should be removed by gravity and/or be rained out.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required). The product can be neutralised using highly diluted hydrochloric acid, which should be added very slowly by specialised personnel wearing proper protection. Never neutralise the solid product.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1823	1823	1823
14.2 Proper Shipping Name	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID
14.3 Transport hazard class	8	8	8
14.4 Packing Group	II	II	II

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code 2X

GTEPG 8A1

EmS F-A, S-B

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **CITRIC ACID**

Synonyms 2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID ● CITRIC ACID ANHYDROUS ● CITRIC ACID MONOHYDRATE

1.2 Uses and uses advised against

Uses INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Skin Corrosion/Irritation: Category 2
Serious Eye Damage / Eye Irritation: Category 2A
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Prevention statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P321	Specific treatment is advised - see first aid instructions.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage statements

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CITRIC ACID	77-92-9	201-069-1	>99%
WATER	7732-18-5	231-791-2	<1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes, skin and respiratory system.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from moisture, incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	At high dust levels, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE CRYSTALLINE POWDER
Odour	ODOURLESS
Flammability	COMBUSTIBLE
Flash point	174°C
Boiling point	175°C (Decomposes)
Melting point	153°C
Evaporation rate	NOT AVAILABLE
pH	2.2 (0.1M Solution)
Vapour density	NOT AVAILABLE
Relative density	1.665

9.1 Information on basic physical and chemical properties

Solubility (water)	1330 kg/m³ @ 20°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	345°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.
LD50 (Ingestion): 3000 mg/kg (rat)
LD50 (Intraperitoneal): 290 mg/kg (rat)
LD50 (Intravenous): 42 mg/kg (mouse)
LDLo (Ingestion): 7000 mg/kg (rabbit)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CITRIC ACID	3000 mg/kg (rat)	> 2000 mg/kg (rat)	--

Additional ingredient toxicity values:

CITRIC ACID (77-92-9)

LD50 (intraperitoneal)	290 mg/kg (rat)
LD50 (intravenous)	42 mg/kg (mouse)
LDLo (oral)	7000 mg/kg (rabbit)

Skin Irritating to the skin. Contact may result in irritation, redness, rash and dermatitis.

Eye Irritating to the eyes. Contact may result in irritation, lacrimation, pain and redness. May result in burns with prolonged contact.

Sensitisation Not classified as causing skin or respiratory sensitisation. However, citric acid has the potential to cause allergic effects.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Irritating to the respiratory system. Over exposure may result in irritation of the nose and throat, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Leuciscus idus melanotus): 440 mg/L/48hrs.
LC50 (Daphnia magna (Water flea)): 1.535 mg/L/24hrs.

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

Citric acid is expected to have very high mobility in soil.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Neutralise with lime, anion exchanger or similar. For small amounts, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **DEFOAM AP 400**

Synonyms DEFOAMER

1.2 Uses and uses advised against

Uses TREATMENT OF FOAMING IN DRILLING FLUIDS

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POLYETHYLENE GLYCOL	25322-68-3	500-038-2	45 to 60%
OCTAN-2-OL	123-96-6	204-667-0	40 to 55%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed
Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR COLOURLESS LIQUID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	100°C to 102°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Relative density	1.00 to 1.17
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Freezing point	-7°C to 0°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POLYETHYLENE GLYCOL	> 15,000 mg/kg (rat)	> 20,000 mg/kg (rabbit)	--
OCTAN-2-OL	--	2000 mg/kg (rat)	--

Skin Not classified as a skin irritant. Contact may cause temporary mild skin irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

Driscal® D Polymer

Version 2.4 Revision Date 2025-05-14

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name	:	Driscal® D Polymer
Material	:	1112534, 1016818
Use	:	Drilling Fluid Additive
Company	:	Chevron Phillips Chemical Company LP Drilling Specialties Company LLC 9500 Lakeside Blvd. The Woodlands, TX 77381

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726;POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;

Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052
Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification
: Combustible dust

Labeling

Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.

Potential Health Effects

Physical Hazards : Mechanical processing may form combustible dust concentrations in air and thermal processing at elevated temperatures may generate simple hydrocarbons and carbon oxides.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : High Temperature Polymer

Component	CAS-No.	Weight %
Sodium salt of sulfonated acrylamide and vinyl lactam	Proprietary	100

SECTION 4: First aid measures

General advice	:	No hazards which require special first aid measures.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

SECTION 6: Accidental release measures

Personal precautions	:	Avoid dust formation.
Environmental precautions	:	No special environmental precautions required.
Methods for cleaning up	:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Additional advice	:	Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Advice on protection against fire and explosion	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers	:	Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	No materials to be especially mentioned.
Use	:	Drilling Fluid Additive

SECTION 8: Exposure controls/personal protection

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Safety glasses.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Powder
Physical state	:	solid
Color	:	White
Odor	:	no odor
Odor Threshold	:	No data available

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	No
Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Molecular weight	:	Not applicable
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	No data available
Vapor pressure	:	No data available
Relative density	:	1.44

Density	:	No data available
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Pow: < 3
Solubility in other solvents	:	8.940 g/l at 20°C (68°F) Medium: Water Method: OECD Test Guideline 120
Viscosity, kinematic	:	No data available
Relative vapor density	:	No data available
Evaporation rate	:	No data available

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Conditions to avoid : No data available.

Materials to avoid : No data available.

Thermal decomposition : No data available

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Driscal® D Polymer
Skin irritation : No skin irritation.

Driscal® D Polymer
Eye irritation : No eye irritation.

Driscal® D Polymer
Further information : The product contains no substances classified as hazardous to health in concentrations which should be taken into

account.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish	:	LC50: > 1,800 mg/l Exposure time: 96 h Species: Scophthalmus maximus (Flatfish, Flounder) static test Method: PARCOM Protocol Part B
Toxicity to daphnia and other aquatic invertebrates	:	LC50: 599 mg/l Exposure time: 48 h Species: Acartia tonsa (Marine Copepod) static test Method: ISO TC147/SC5/WG2
Toxicity to algae	:	EC50: 2,693 mg/l Exposure time: 72 h Species: Skeletonema costatum (marine diatom) static test Method: ISO 10253
Biodegradability	:	This material is not expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation	:	Accumulation in aquatic organisms is unlikely. The polymer is too large to be bioavailable.
Mobility	:	No data available
Additional ecological information	:	This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.
Long-term (chronic) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging	:	Empty containers should be taken to an approved waste

handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Combustible dust

CERCLA Reportable Quantity	:	This material does not contain any components with a CERCLA RQ.
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.
SARA 313 Components	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

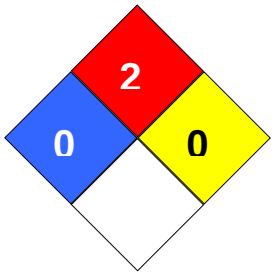
Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	All substances listed as active on the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory

Korea KECI	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	This product contains one or more substances that have been notified under New Substances Notification laws.

SECTION 16: Other information

NFPA Classification : Health Hazard: 0
Fire Hazard: 2
Reactivity Hazard: 0



Further information

Legacy SDS Number : 244990

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit

IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

DSCO™ Defoam

Version 1.7 Revision Date 2023-10-18

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : DSCO™ Defoam
Material : 1124728, 1016819

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052

Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification
:

Not a hazardous substance or mixture.

Labeling

Not a hazardous substance or mixture.

Carcinogenicity:

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms	:	None established
Molecular formula	:	(C3H6O)nH2O

Contains no hazardous ingredients according to GHS.

SECTION 4: First aid measures

General advice	:	No hazards which require special first aid measures.

If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point	:	185°C (365°F)
Autoignition temperature	:	No data available
Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific hazards during fire fighting	:	Standard procedure for chemical fires.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Normal measures for preventive fire protection.
Hazardous decomposition products	:	Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions	:	Use personal protective equipment.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	Avoid inhalation of vapor or mist. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	No materials to be especially mentioned.

SECTION 8: Exposure controls/personal protection

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Tightly fitting safety goggles.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	liquid
Physical state	:	liquid
Color	:	Clear to light amber
Odor	:	Slight

Safety data

Flash point	:	185°C (365°F)
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	no
Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Molecular formula	:	(C3H6O)nH2O
Molecular weight	:	Not applicable
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	No data available
Vapor pressure	:	Not applicable
Relative density	:	1 at 25 °C (77 °F)
Water solubility	:	partly soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Relative vapor density	:	No data available
Evaporation rate	:	No data available
Percent volatile	:	< 0.1 %

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid : High Temperatures.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Thermal decomposition : No data available

Hazardous decomposition products : Carbon oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

DSCO™ Defoam
Acute oral toxicity : LD50: > 2,000 mg/kg
Species: Rat
Method: OECD Test Guideline 401

DSCO™ Defoam
Acute dermal toxicity : LD50: > 3,000 mg/kg
Species: Rabbit
Method: OECD Test Guideline 402

DSCO™ Defoam
Skin irritation : No skin irritation

DSCO™ Defoam
Sensitization : Did not cause sensitization on laboratory animals.

DSCO™ Defoam
Further information : No data available.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish : LC50: > 100 mg/l
Exposure time: 96 h
Species: Danio rerio (Zebra Fish)
static test Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates	:	> 100 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202
Toxicity to algae	:	EC50: > 100 mg/l Exposure time: 72 h Species: Desmodesmus subspicatus (green algae) static test Method: OECD Test Guideline 201
Biodegradability	:	aerobic Result: Readily biodegradable. 86.6 % Testing period: 28 d Method: OECD Test Guideline 301F

Elimination information (persistence and degradability)

Bioaccumulation	:	This material is not expected to bioaccumulate.
Mobility	:	No data available
Additional ecological information	:	No data available

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.
Long-term (chronic) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names,

etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards	:	No SARA Hazards
CERCLA Reportable Quantity	:	Calculated RQ exceeds reasonably attainable upper limit. Propylene oxide
SARA 302 Reportable Quantity	:	Calculated RQ exceeds reasonably attainable upper limit. Propylene oxide

SARA 302 Threshold Planning Quantity	:	This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	:	Calculated RQ exceeds reasonably attainable upper limit. Propylene oxide 75-56-9 100 lbs
SARA 313 Components	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):
: Polypropylene Glycol - 25322-69-4

US State Regulations

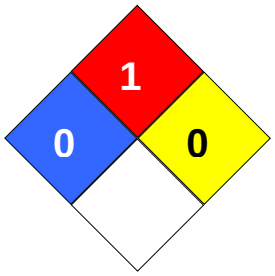
Pennsylvania Right To Know	:	Polypropylene Glycol - 25322-69-4
California Prop. 65 Components	:	WARNING! This product contains a chemical known in the State of California to cause cancer. Propylene oxide 75-56-9

Notification status

Europe REACH	:	This product is in full compliance according to REACH regulation 1907/2006/EC.
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 0
Fire Hazard: 1
Reactivity Hazard: 0



Further information

Legacy SDS Number : 430500

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic	NIOSH	National Institute for Occupational

	Substances List		Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **DYNAFIBER (TM) AP (F, M, C)**

Synonyms DYNAFIBER ● NDFT 376 ● NDFT 377

1.2 Uses and uses advised against

Uses LOST CIRCULATION MATERIAL

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ORGANIC FIBRE(S)	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Relative density	0.9 to 1.2
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ORGANIC FIBRE(S)	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m³/4 hours (rat)

Skin Not classified as a skin irritant. Skin irritation is not anticipated under normal conditions of use.

Eye Not classified as an eye irritant. Eye irritation is not anticipated under normal conditions of use.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

COMBUSTIBLE - EXPLOSIVE CARBONACEOUS DUST: Carbonaceous/organic dusts have the potential, with dispersion, to present an explosion hazard if an ignition source exists. All equipment used to handle, transfer or store this product MUST BE cleaned thoroughly prior to cutting, welding, drilling or exposure to any other form of heat or ignition sources. If bulk stored, containers should be ventilated on a routine basis to avoid vapour accumulation (where applicable, eg for flocculants).

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **FLEXFIRM**

Synonyms FLEXFIRM KA ● POTASSIUM SILICATE POWDER

1.2 Uses and uses advised against

Uses DRILLING AID

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Skin Corrosion/Irritation: Category 2
Serious Eye Damage / Eye Irritation: Category 2A
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)
Specific Target Organ Toxicity (Repeated Exposure): Category 2

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Prevention statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment is advised - see first aid instructions.
P330	Rinse mouth.
P332 + P337 + P313	If skin or eye irritation occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage statements

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POTASSIUM SILICATE	1312-76-1	215-199-1	99%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	0.1 to 1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes and skin.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	11.3 (50 % solution) (Approximately)
Vapour density	NOT AVAILABLE
Relative density	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POTASSIUM SILICATE	1600 mg/kg (rat)	--	--

Skin Contact may result in irritation, redness, rash and dermatitis.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.

Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.
STOT - repeated exposure	Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The high pH when undiluted or unneutralized is acutely harmful to aquatic life. The following data is reported for chemically similar Sodium Silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm.

12.2 Persistence and degradability

This material is not persistent in aquatic systems.

12.3 Bioaccumulative potential

Neither silica nor potassium will appreciably bio-concentrate up the food chain.

12.4 Mobility in soil

Expected to be mobile in soil. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule	Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings

AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **FRAC ATTACK**

Synonyms FRAC-ATTACK

1.2 Uses and uses advised against

Uses LOST CIRCULATION MATERIAL

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Skin Corrosion/Irritation: Category 2
Serious Eye Damage / Eye Irritation: Category 1
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Prevention statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage statements

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	<30%
DIATOMACEOUS EARTH	61790-53-2	612-383-7	<15%
FULLERS EARTH	8031-18-3	617-052-0	<12%
CALCIUM OXIDE	1305-78-8	215-138-9	<10%
CALCIUM HYDROXIDE	1305-62-0	215-137-3	<5%
CRISTOBALITE	14464-46-1	238-455-4	<5%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<3%
MAGNESIUM OXIDE	1309-48-4	215-171-9	<2%
1,3 BUTADIENE/STYRENE COPOLYMERS	9003-55-8	618-370-2	<50%
2-PROPENENITRILE-1,3-BUTADIENE RUBBER	9003-18-3	618-357-1	<50%
NATURAL RUBBER	9006-04-6	232-689-0	<50%
POLYISOPRENE	9003-31-0	618-362-9	<50%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes and skin.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Calcium hydroxide	SWA [AUS]	--	5	--	--
Calcium hydroxide	SWA [Proposed]	--	1	--	--
Calcium oxide	SWA [AUS]	--	2	--	--
Calcium oxide	SWA [Proposed]	--	1	--	--
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--
Cristobalite (respirable dust)	SWA [AUS]	--	0.05	--	--
Diatomaceous earth (uncalcined) (a)	SWA [AUS]	--	10	--	--
Magnesium oxide (fume)	SWA [AUS]	--	10	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BROWN/GREY POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT RELEVANT
Melting point	NOT AVAILABLE
Evaporation rate	NON VOLATILE
pH	ALKALINE
Vapour density	NOT AVAILABLE
Relative density	2.10
Solubility (water)	NEGLIGIBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	NOT RELEVANT

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve Fluorine, Oxygen Difluoride, Chlorine, Trifluoride and Hydrofluoric Acid when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity Data available for the ingredients:
CALCIUM HYDROXIDE (1305-62-0):
LD50 (ingestion): 7300 mg/kg (mouse)
CRISTOBALITE (14464-46-1):
TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)
QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
LCLo (inhalation): 300 ug/m³/10 years (human)
TCLo (inhalation): 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis)
CELLULOSE (9004-34-6):
LC50 (inhalation) > 5800 mg/m³/4 hours (rat)
LD50 (ingestion) > 5000 mg/kg (rat)
LD50 (intraperitoneal) > 31600 mg/kg (rat)
LD50 (skin) > 2000 mg/kg (rabbit)
MAGNESIUM OXIDE (1309-48-4):
TCLo (inhalation): 400 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m³/4 hours (rat)
DIATOMACEOUS EARTH	> 5000 mg/kg (rat)	> 5000 mg/kg (rabbit)	--
CALCIUM HYDROXIDE	7300 mg/kg (mouse)	--	--

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
LD50 (intraperitoneal) > 31600 mg/kg (rat)

CRISTOBALITE (14464-46-1)
TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)

Skin Irritating to the skin. Contact may result in irritation, redness, pain, rash, dermatitis and possible skin burns.

Eye Irritating to the eyes. Contact may result in irritation, lacrimation, pain, redness, conjunctivitis and possible burns.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Irritating to the respiratory system. Over exposure may result in irritation of the nose and throat, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. Repeated exposure to crystalline silica may cause lung fibrosis (silicosis), however due to the low levels of respirable crystalline silica in this product, adverse health effects are not anticipated with normal use.

Aspiration Not classified as causing aspiration. Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The manufacturer reports that this product is harmful to aquatic life.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **FRACSEAL FINE/MEDIUM**

Synonyms FRACSEAL F ● FRACSEAL FINE ● FRACSEAL M ● FRACSEAL MEDIUM

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin Exposure is considered unlikely. Skin irritation is not anticipated.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for damage to containers.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	When using large quantities or where heavy contamination is likely, wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	ODOURLESS
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	500°C to 518°C
Evaporation rate	NOT AVAILABLE
pH	6.5 to 7.5
Vapour density	NOT AVAILABLE
Relative density	0.9
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Oral LD50 (rat) is > 5000 mg/kg.
Dermal LD50 (rabbit) is > 2000 mg/kg.
LC50 (rat) is 510 mg/m³/2 hours.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m³/4 hours (rat)

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
LD50 (intraperitoneal) > 31600 mg/kg (rat)

Skin Not classified as a skin irritant.

Eye Not classified as an eye irritant. Contact may cause mild discomfort.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No information provided.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
No information provided.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse where possible. No special precautions are normally required when handling this product.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **GEOVIS**

Synonyms DIUTAN GUM

1.2 Uses and uses advised against

Uses VISCOSITY MODIFIER

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
D-GLUCURONO-6-DEOXY-L-MANNO-D-GLUCAN, ACETATE, CALCIUM MAGNESIUM POTASSIUM SODIUM SALT	595585-15-2	-	>50%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed
Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE TO TAN POWDER
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NON VOLATILE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	351°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	0 %

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
D-GLUCURONO-6-DEOXY-L-MANNO-D-GLUCAN, ACETATE, CALCIUM MAGNESIUM POTASSIUM SODIUM SALT	> 5000 mg/kg (rat)	--	--

Skin Not classified as a skin irritant. Contact may result in mild irritation. The hydrophilic nature of the notified polymer in powder form can contribute to mechanical irritation and collection in the eyes when dust is generated.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness. The hydrophilic nature of the notified polymer in powder form can contribute to mechanical irritation and collection on the skin when dust is generated.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure. The hydrophilic nature of the notified polymer in powder form can contribute to mechanical irritation and collection in the airways when dust is generated.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The notified polymer is not toxic to fish (rainbow trout), aquatic invertebrates (daphnia magna) and marine invertebrates (acartia tonsa) under test conditions.

12.2 Persistence and degradability

Considered readily biodegradable.

12.3 Bioaccumulative potential

No experimental results provided. However, based on the molecular weight, water solubility and Kow value the notified polymer is not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

HYDROCHLORIC ACID 32%

Coogee

Chemwatch Hazard Alert Code: **3**

Chemwatch: **48-4484**
Version No: **8.1**
Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: **23/12/2022**
Print Date: **03/11/2023**
L.GHS.AUS.EN.E

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	HYDROCHLORIC ACID 32%
Chemical Name	Not Applicable
Synonyms	COOGEE HYDROCHLORIC ACID 32%, MURIATIC ACID, SPIRITS OF SALTS; Product code: 9178
Proper shipping name	HYDROCHLORIC ACID
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Acidifier, Chemical intermediate, Laboratory reagent, Pickling and anodising metals, scale remover.

Details of the manufacturer or supplier of the safety data sheet

Registered company name	**Coogee**
Address	Cnr of Patterson and Kwinana Beach Roads Kwinana WA Australia
Telephone	+61 8 9439 8200
Fax	+61 8 9439 8300
Website	www.coogee.com.au
Email	enquiry@coogee.com.au

Emergency telephone number

Association / Organisation	**Coogee**
Emergency telephone numbers	**1800 800 655**
Other emergency telephone numbers	**Not Available**

SECTION 2 Hazards identification

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	S6
Classification [1]	Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 4
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H314	Causes severe skin burns and eye damage.
H413	May cause long lasting harmful effects to aquatic life.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P260	Do not breathe mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Page 1 continued...

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7647-01-0	32	hydrochloric acid
7732-18-5	balance	water
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available*	

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
For acute or short term repeated exposures to strong acids:
- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

INGESTION:
- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- **DO NOT** attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:
- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:
- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjuctival cul-de-sacs. Irrigation should last at least 20-30 minutes. **DO NOT** use neutralising agents or any other additives. Several litres of saline are required.
- Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).

[Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 Firefighting measures

Extinguishing media

- Water spray or fog.

Continued...

- Foam.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Advice for firefighters

Fire Fighting	HCl can liberate highly flammable hydrogen gas when in contact with certain metals. - Alert Fire Brigade and tell them location and nature of hazard. - Wear full body protective clothing with breathing apparatus.
Fire/Explosion Hazard	- Non combustible. - Not considered to be a significant fire risk. Decomposition may produce toxic fumes of: hydrogen chloride
HAZCHEM	2R

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. - Check regularly for spills and leaks. - Clean up all spills immediately. - Avoid breathing vapours and contact with skin and eyes.
Major Spills	Chemical Class:acidic compounds, inorganic For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS
LAND SPILL - SMALL				
foamed glass - pillows	1	throw	pitchfork	R, P, DGC, RT
expanded mineral - particulate	2	shovel	shovel	R, I, W, P, DGC
foamed glass - particulate	2	shovel	shovel	R, W, P, DGC
LAND SPILL - MEDIUM				
expanded mineral -particulate	1	blower	skiploader	R, I, W, P, DGC
foamed glass- particulate	2	blower	skiploader	R, W, P, DGC
foamed glass - particulate	3	throw	skiploader	R, W, P, DGC

Legend
DGC: Not effective where ground cover is dense
R; Not reusable
I: Not incinerable
P: Effectiveness reduced when rainy
RT:Not effective where terrain is rugged
SS: Not for use within environmentally sensitive sites
W: Effectiveness reduced when windy
Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;
R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	- Avoid all personal contact, including inhalation. - Wear protective clothing when risk of exposure occurs.
Other information	- Store in original containers. - Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	- **DO NOT** use aluminium or galvanised containers - Lined metal can, lined metal pail/ can. - Plastic pail. For low viscosity materials - Drums and jerricans must be of the non-removable head type. - Where a can is to be used as an inner package, the can must have a screwed enclosure.
Storage incompatibility	Incompatible with oxidizing agents eg. hypochlorites, alkalis, most metals etc, alcohols and amines. - Inorganic acids are generally soluble in water with the release of hydrogen ions. The resulting solutions have pH's of less than 7.0. - Reacts vigorously with alkalis - Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.

SECTION 8 Exposure controls / personal protection

Continued...

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	hydrochloric acid	Hydrogen chloride	Not Available	Not Available	5 ppm / 7.5 mg/m3	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
hydrochloric acid	Not Available	Not Available	Not Available
hydrochloric acid	1.8 ppm	22 ppm	100 ppm

Ingredient	Original IDLH	Revised IDLH
hydrochloric acid	50 ppm	Not Available
water	Not Available	Not Available

MATERIAL DATA

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ Full face shield may be required for supplementary but never for primary protection of eyes.
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber ▸ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ PVC Apron.

Respiratory protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

76b-p()

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Colourless to slightly yellow corrosive liquid with pungent acidic odour; miscible with water.

Physical state	Liquid	**Relative density (Water = 1)**	1.161
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	<1	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	<-20	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	109	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	as for water	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	100
Vapour pressure (kPa)	2	**Gas group**	Not Available
Solubility in water	Miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	1.3	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Contact with alkaline material liberates heat
Possibility of hazardous reactions	See section 7

Continued...

Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Acidic corrosives produce respiratory tract irritation with coughing, choking and mucous membrane damage. Symptoms of exposure may include dizziness, headache, nausea and weakness. Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure. Exposures of 1300 to 2000 ppm have been lethal to humans in a few minutes. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects; these may be fatal. Inhalation of the vapour is hazardous and may even be fatal
Ingestion	Ingestion of acidic corrosives may produce circumoral burns with a distinct discolouration of the mucous membranes of the mouth, throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident.
Skin Contact	The material can produce chemical burns following direct contact with the skin. Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
Chronic	Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Repeated or prolonged exposure to acids may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the nasal mucous membranes. Repeated exposures of animals to concentrations of about 34 ppm HCl produced no immediate toxic effects.

HYDROCHLORIC ACID 32%	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
hydrochloric acid	**TOXICITY**	**IRRITATION**
	dermal (mouse) LD50: 1449 mg/kg[2]	Eye (rabbit): 5mg/30s - mild
	Oral (Rat) LD50: 900 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
		Skin: adverse effect observed (corrosive)[1]
		Skin: adverse effect observed (irritating)[1]
water	**TOXICITY**	**IRRITATION**
	Oral (Rat) LD50: >90000 mg/kg[2]	Not Available
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

HYDROCHLORIC ACID 32%	Inhalation (Rat) LC50: 4.2-4.7 mg/l/1h
HYDROCHLORIC ACID	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
HYDROCHLORIC ACID & WATER	No significant acute toxicological data identified in literature search.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 Ecological information

Continued...

Toxicity

HYDROCHLORIC ACID 32%	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
hydrochloric acid	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	334.734mg/L	4
	EC50(ECx)	9.33h	Fish	0.51mg/L	4
water	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
hydrochloric acid	LOW	LOW
water	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
hydrochloric acid	LOW (LogKOW = 0.5392)

Mobility in soil

Ingredient	Mobility
hydrochloric acid	LOW (KOC = 14.3)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2R

Land transport (ADG)

14.1. **UN number or ID number**	1789
14.2. **UN proper shipping name**	HYDROCHLORIC ACID
14.3. **Transport hazard class(es)**	Class: 8 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: Not Applicable Limited quantity: 1 L

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	1789
14.2. **UN proper shipping name**	Hydrochloric acid

Continued...

14.3. **Transport hazard class(es)**	ICAO/IATA Class: 8 ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: 8L
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A3 A803 Cargo Only Packing Instructions: 855 Cargo Only Maximum Qty / Pack: 30 L Passenger and Cargo Packing Instructions: 851 Passenger and Cargo Maximum Qty / Pack: 1 L Passenger and Cargo Limited Quantity Packing Instructions: Y840 Passenger and Cargo Limited Maximum Qty / Pack: 0.5 L

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	1789
14.2. **UN proper shipping name**	HYDROCHLORIC ACID
14.3. **Transport hazard class(es)**	IMDG Class: 8 IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	II
14.5 **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: F-A, S-B Special provisions: Not Applicable Limited Quantities: 1 L

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
hydrochloric acid	Not Available
water	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
hydrochloric acid	Not Available
water	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

hydrochloric acid is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australian Inventory of Industrial Chemicals (AIIC)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

water is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (hydrochloric acid; water)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes

Continued...

National Inventory	Status
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	23/12/2022
Initial Date	31/03/2015

SDS Version Summary

Version	Date of Update	Sections Updated
7.1	03/09/2020	Classification change due to full database hazard calculation/update.
8.1	23/12/2022	Classification review due to GHS Revision change.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **IDCIDE-20**

Synonyms IDCIDE 20

1.2 Uses and uses advised against

Uses BIOCIDE ● DRILLING FLUID ADDITIVE ● WATER TREATMENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Skin Corrosion/Irritation: Category 2
Skin Sensitisation: Category 1
Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

Prevention statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment is advised - see first aid instructions.
P330	Rinse mouth.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage statements

None allocated.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	55566-30-8	259-709-0	18 to 25%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. May evolve carbon oxides, sulphur oxides and phosphates when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls. In a laboratory situation, wear a laboratory coat.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS TO PALE YELLOW LIQUID
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 100°C
Melting point	< 0°C
Evaporation rate	AS FOR WATER
pH	3.0 to 3.5
Vapour density	NOT AVAILABLE
Relative density	1.08
Solubility (water)	SOLUBLE
Vapour pressure	18 mm Hg @ 20°C
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	> 60 % (Water)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	248 mg/kg (rat)	> 2000 mg/kg (rat)	5.5 mg/L/4hrs (rat)

Additional ingredient toxicity values:

TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) (55566-30-8)

TDLo (oral) 650 mg/kg/13 weeks - intermittent (rat)

Skin Contact may result in irritation, redness, pain and rash.

Eye	Contact may result in irritation, lacrimation, pain and redness.
Sensitisation	May cause an allergic skin reaction. This product is not classified as a respiratory sensitiser.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in respiratory irritation, nausea, dizziness, drowsiness and headache.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

75% TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE (55566-30-8):
LC50 (Rainbow Trout) = 119 mg/L/96 hr
LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr
EC50 (Daphnia Magna) = 19 mg/L/48 hr
LC50 (Brown Shrimp) = 340 mg/L/96 hr
LC50 (Mysid Shrimp) = 9.5 mg/L/96 hr
LC50 (Sheepshead Minnow) = 94 mg/L/96 hr
LC50 (Jevenile Plaice) = 86 mg/L/96 hr

Waste Water management
EC50 (Activated Sludge) = 24 mg/L/3 hr

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m^3	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **JK-161 LV**

Synonyms JK - 161 LV ● LOW MOLECULAR WEIGHT PHPA ● PARTIALLY HYDROLYZED POLYACRYLAMIDE ● PHPA

1.2 Uses and uses advised against

Uses ENCAPSULATING AGENT ● HIGH PERFORMANCE WBM

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ACRYLAMIDE, SODIUM ACRYLATE COPOLYMER	25085-02-3	607-529-1	>90%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Acrylamide	SWA [AUS]	--	0.03	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE GRANULAR SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	0.8
Solubility (water)	10 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 401).
Skin	Low irritant. Prolonged or repeated contact may result in mild irritation, rash and dermatitis.
Eye	Low to moderate irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation. However, allergic reactions are possible.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	This product may contain trace amounts of residual acrylamide, which is classified as a probable human carcinogen (IARC Group 2A). However, due to the very low levels present, adverse health effects are not anticipated with normal use.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012)
Mysidopsis bahia = 48hr LC50 = 16.2 mg/L.
Menidia beryllina = 48hr LC50 = 34.2 mg/L.
Scophthalmus Maximus = 96hr LC50 > 1000 mg/L.
Skeletonemia costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L]
Acartia tonsa = 48 hr EC50 = 393 mg/L [NOEC = 112 mg/L]
Corophium Volutator = 10 Day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg

12.2 Persistence and degradability

Not readily biodegradable (by OECD criteria).

12.3 Bioaccumulative potential

Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

ACRYLIC - ACRYLAMIDE RESINS: These resins are generally of low toxicity. Toxicity increases with presence of significant concentrations of acrylic - acrylamide monomers. These monomers have been linked with the development of skin sensitisation.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

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HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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Web: www.rmtglobal.com

[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **MAGNESIUM OXIDE**

Synonyms CALCINED MAGNESIA ● MAGNESIA ● MAGOXI16 / 27 - PRODUCT CODE

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE ● PH INDICATOR

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
MAGNESIUM OXIDE	1309-48-4	215-171-9	>94%
CALCIUM OXIDE	1305-78-8	215-138-9	<3.5%
SILICON DIOXIDE (SILICA, AMORPHOUS)	7631-86-9	231-545-4	<2.5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve magnesium oxides when heated to decomposition.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure product is adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Calcium oxide	SWA [AUS]	--	2	--	--
Calcium oxide	SWA [Proposed]	--	1	--	--
Fumed silica (respirable dust)	SWA [AUS]	--	2	--	--
Magnesium oxide (fume)	SWA [AUS]	--	10	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE GRANULES
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	3600°C
Melting point	2800°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	3.6 to 3.7
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	0 %

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible (violently) with interhalogens (e.g. bromine pentafluoride, chlorine trifluoride) and phosphorus pentachloride. May ignite or explode when heated with aluminium powder. Also incompatible with acids (e.g. nitric acid) and dampness as material hydrates.

10.6 Hazardous decomposition products

May evolve magnesium oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SILICON DIOXIDE (SILICA, AMORPHOUS)	3160 mg/kg (rat)	--	--

Skin Contact may result in irritation, redness, rash and dermatitis.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure. However, over exposure may result in irritation of the nose and throat, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, cover with moist sand, vermiculite or similar to avoid dust hazard and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
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LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **MICROFLOW FLUID SOLUTION**

Synonyms

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POTASSIUM CHLORIDE	7447-40-7	231-211-8	<2%
SWEET ORANGE OIL	68647-72-3	614-678-6	0.1 to 0.3%
ISOPROPYL ALCOHOL	67-63-0	200-661-7	0.075 to 0.25%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower are recommended.

4.2 Most important symptoms and effects, both acute and delayed
See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (potassium oxides, chlorides) when heated to decomposition.

5.3 Advice for firefighters
No fire or explosion hazard exists.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Isopropyl alcohol	SWA [AUS]	400	983	500	1230
Isopropyl alcohol	SWA [Proposed]	200	491	400	984

Biological limits No Biological Limit Value allocated.

Ingredient	Determinant	Sampling Time	BEI
ISOPROPYL ALCOHOL	Acetone in urine	End of shift at end of workweek	40 mg/L

Reference: ACGIH Biological Exposure Indices

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	In a laboratory situation, wear a laboratory coat.
Respiratory	Not required under normal conditions of use.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	LIQUID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Compatible with most commonly used materials.

10.6 Hazardous decomposition products
May evolve toxic gases (potassium oxides, chlorides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity This product is expected to be of low toxicity. Acute potassium poisoning via ingestion is rare as a large single dose usually induces vomiting, and potassium is rapidly excreted by the body, however this product does have the potential to cause cardiovascular disorders.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POTASSIUM CHLORIDE	2600 mg/kg (rat)	--	--
ISOPROPYL ALCOHOL	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/kg (rat) (AICIS)	> 20 mg/L (rat) (AICIS)

Skin Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation.

Eye Low to moderate irritant. Contact may result in mild irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No information provided.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
No information provided.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal No special precautions are required for the disposal of this product.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **NEWPAC LV/RD**

Synonyms NEWPAC RD ● POLICELL RG ● RHEOPAC LV ● RHEOPAC R ● RHEOPAC R/LV/UL/RD/LVD ● RHEOPAC UL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CARBOXYMETHYL CELLULOSE	9004-32-4	618-378-6	>88%
SODIUM CHLORIDE	7647-14-5	231-598-3	<1.8%
WATER	7732-18-5	231-791-2	<10%
SODIUM GLYCOLATE	2836-32-0	212-730-9	<0.7%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed
Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE OR YELLOWISH POWDER/GRANULES
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.0 to 8.5 (1 % solution)
Vapour density	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Toxicity Data available on the ingredients:
SODIUM CARBOXYMETHYL CELLULOSE (9004-32-4)
LD50 (Ingestion): 16000 mg/kg (guinea pig)
LD50 (Skin): > 2000 mg/kg (rabbit)
TDLo (Ingestion): 140 mg/kg (rat)
SODIUM CHLORIDE (7647-14-5)
LC50 (Inhalation): > 42000 mg/m3/1 hour (rat)
LD50 (Ingestion): 3000 mg/kg (rat)
LD50 (Intraperitoneal): 2602 mg/kg (mouse)
LD50 (Intravenous): 645 mg/kg (mouse)
LD50 (Skin): > 10000 mg/kg (rabbit)
LD50 (Subcutaneous): 3000 mg/kg (mouse)
LDLo (Ingestion): 8000 mg/kg (rabbit)
LDLo (Intravenous): 300 mg/kg (guinea pig)
LDLo (Subcutaneous): 2160 mg/kg (guinea pig)
TDLo (Ingestion): 12357 mg/kg (human)
SODIUM GLYCOLATE (2836-32-0)
LD50 (Ingestion): 6700 mg/kg (mouse)
LDLo (Ingestion): 500 mg/kg (cat)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CARBOXYMETHYL CELLULOSE	16000 mg/kg (guinea pig)	> 2000 mg/kg (rabbit)	--
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m³/1 hour (rat)
SODIUM GLYCOLATE	6700 mg/kg (mouse)	--	--

Additional ingredient toxicity values:

SODIUM CARBOXYMETHYL CELLULOSE (9004-32-4)
TDLo (oral) 140 mg/kg (rat)

SODIUM CHLORIDE (7647-14-5)
LD50 (intraperitoneal) 2602 mg/kg (mouse)
LD50 (intravenous) 645 mg/kg (mouse)
LD50 (subcutaneous) 3000 mg/kg (mouse)
LDLo (intravenous) 300 mg/kg (guinea pig)
LDLo (oral) 8000 mg/kg (rabbit)
LDLo (subcutaneous) 2160 mg/kg (guinea pig)
TDLo (oral) 12357 mg/kg (human)

SODIUM GLYCOLATE (2836-32-0)
LDLo (oral) 500 mg/kg (cat)

Skin Not classified as a skin irritant. Contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Fresh Water Trout) > 21,000 ppm/96hrs.
LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
Not expected to bioaccumulate.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards
No information provided.

14.6 Special precautions for user
Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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[End of SDS]

SAFETY DATA SHEET

NewPerm™ NF

Issue Date 29-Jul-2016 **Revision Date** 07-Jul-2021 **Version** 1
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

0

Product identifier

Product Name NewPerm™ NF

Product Code NDF00503

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use shale inhibitor

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

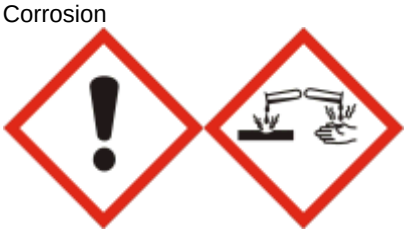
Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Dermal	Category 4 - (H312)
Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitization	Category 1B - (H317)
Specific target organ toxicity (single exposure)	Category 3 - (H335)

Label elements

Exclamation mark
Corrosion



Signal word
Danger

Hazard statements
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Use only outdoors or in a well-ventilated area
Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards
Harmful to aquatic life
General Hazards
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Not applicable

Mixture

Chemical name	CAS No.	Weight-%	REACH Registration Number
Hexanedinitrile, hydrogenated, high-boiling fraction	68411-90-5	30-40	No data available

Additional information
The pH of the mixture is adjusted to pH 9-10 with Hydrochloric Acid (CAS 7647-01-0)

Section 4: FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical, CO2, water spray or alcohol-resistant foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NOx).

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Protect from moisture. Store away from other materials.

Incompatible materials Strong oxidizing agents Aldehydes Halogens Acids Ketone Nitrates Halogenated compounds Phenols Isocyanates

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Hand protection Wear suitable gloves. Impervious gloves.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	liquid	**Odor**	Pungent.
Color	brown	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	9.0 - 10.0	
Melting point / freezing point		No information available
Boiling point / boiling range	100 °C	
Flash point	> 100 °C	
Evaporation rate		No information available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		Not applicable
Upper flammability limit:		Not applicable
Lower flammability limit:		Not applicable
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.00-1.10	
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		
Dynamic viscosity		

Other Information

Softening point No information available
Molecular weight No information available

VOC Content (%)	14
Liquid Density	1.00-1.10 g/cm3
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible materials Strong oxidizing agents. Aldehydes. Halogens. Acids. Ketone. Nitrates. Halogenated compounds. Phenols. Isocyanates.

Hazardous Decomposition Products

Hazardous Decomposition Products None known.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. May cause irritation. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion Specific test data for the substance or mixture is not available Causes burns (based on components) Ingestion causes burns of the upper digestive and respiratory tracts May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking May cause lung damage if swallowed May be fatal if swallowed and enters airways

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1,922.60 mg/kg
ATEmix (dermal) 1,754.80 mg/kg ppm mg/l

Unknown acute toxicity 18 % of the mixture consists of ingredient(s) of unknown toxicity
18 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
18 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
18 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
18 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
18 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hexanedinitrile, hydrogenated, high-boiling fraction	= 1500 mg/kg (Rat)	> 200 mg/kg (Rabbit)	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation MAY CAUSE SKIN IRRITATION.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Respiratory or skin sensitization May cause sensitization by skin contact.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability Readily biodegradable.

Product Information			
Method	Exposure time	Value	Results
OECD Test No. 306: Biodegradability in Seawater	28 days	62.4% Biodegradation	Readily biodegradable

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not Regulated

IATA Not Regulated

IMDG Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Does not comply
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 29-Jul-2016

Revision Date 07-Jul-2021

Revision Note
No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

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End of Safety Data Sheet

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **XANTHAN GUM (P)**

Synonyms NEWZAN D ● VISCO XC 84 ● XANTHAN GUM (BIOPOLYMER)

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE ● VISCOSITY MODIFIER

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
XANTHAN GUM	11138-66-2	234-394-2	>87%
WATER	7732-18-5	231-791-2	<13%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Wear a Class P1 (Particulate) respirator. Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	LIGHT BEIGE POWDER
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	1.5
Solubility (water)	MISCIBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products
May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 (oral) > 1000 mg/kg (mouse) LD50 (oral) > 45,000 mg/kg (rat) LD50 (oral) > 20,000 mg/kg (dog) LD50 (intraperitoneal): > 50 mg/kg (mouse) LD50 (intravenous): 100-250 mg/kg (mouse)
Skin	Not classified as a skin irritant. Contact may result in mild irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
Not expected to bioaccumulate.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

SAFETY DATA SHEET

NoFoam™ NS

Issue Date 18-Apr-2017 **Revision date** 31-Jan-2025 **Version** 1
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

1

Product identifier

Product Name NoFoam™ NS

Product Code NDF01004

Other means of identification

Synonyms Avadefoam NS

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use Defoamer

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand); 1-800-424-9300 (International Number);

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification
General Hazards
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Not applicable

Mixture

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	Proprietary	100

Section 4: FIRST AID MEASURES

Description of first aid measures

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Water. Carbon dioxide (CO2).

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
Hazchem code	Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible materials	None known

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	liquid	**Odor**	Slight.
Color	clear	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH		No data available
Melting point / freezing point		No data available
Boiling point / boiling range		No data available
Flash point	> 100 °C	
Evaporation rate		No data available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.95-0.97	
Water solubility	Insoluble in water	
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Hyphen		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available

Other information

Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	0.95-0.97 g/cm3
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information .

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available

Symptoms No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 10,000.00 mg/kg

Unknown acute toxicity 95 % of the mixture consists of ingredient(s) of unknown toxicity
95 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
95 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
95 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
95 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
95 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity	No information available.
Unknown aquatic toxicity	0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability	No information available.

Bioaccumulative potential

Bioaccumulation	No information available.

Mobility

Mobility in soil	No information available.
Mobility	No information available.

Other adverse effects

Other adverse effects	No information available.
Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.
Contaminated packaging	Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG	Not regulated

IATA Not Regulated

IMDG Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Does not comply
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 18-Apr-2017

Revision date 31-Jan-2025

Revision Note

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

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End of Safety Data Sheet

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **POTASSIUM CHLORIDE**

Synonyms KCL ● MURIATE OF POTASH ● POTASH ● SYLVITE

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE ● FERTILISER ● INHIBITOR

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POTASSIUM CHLORIDE	7447-40-7	231-211-8	>97%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (potassium oxides, chlorides) when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	At high dust levels, wear dust-proof goggles.
Hands	With prolonged use, wear PVC or rubber or cotton gloves.
Body	With prolonged use, wear coveralls.
Respiratory	At high dust levels, wear a Class P1 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1413°C
Melting point	773°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	2.0
Solubility (water)	340 g/L @ 20°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Potassium chloride is not in general strongly reactive. Violent reaction with BrF3 and with a mixture of sulfuric acid potassium permanganate mixture (NTP, 1992). Reacts with concentrated sulfuric acid to generate fumes of hydrogen chloride. Incompatible with oxidising agents.

10.6 Hazardous decomposition products

May evolve toxic gases (potassium oxides, chlorides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed in large quantities. Additional toxicity data for potassium chloride:
LD50 (Intraperitoneal): 620 mg/kg (mouse)
LD50 (Intravenous): 117 mg/kg (mouse)
LDLo (Ingestion): 20 mg/kg (man)
LDLo (Intraperitoneal): 900 mg/kg (guinea pig)
LDLo (Intravenous): 77 mg/kg (guinea pig)

LDLo (Subcutaneous): 2120 mg/kg (frog)
TDLo (Ingestion): 60 mg/kg/days (woman)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POTASSIUM CHLORIDE	2600 mg/kg (rat)	--	--

Skin Not classified as a skin irritant. Contact may result in mild irritation and rash.

Eye Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Acute potassium poisoning via ingestion is rare as a large single dose usually induces vomiting, and potassium is rapidly excreted by the body, however this product does have the potential to cause cardiovascular disorders.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

In short-term acute toxicity tests with fish, daphnia and algae the following results were found (lowest test result values): Ictalurus punctulus 48h-LC50 = 720 mg/l; Daphnia magna: 48h-LC50 = 177 mg/l; Nitzschia linearis: 120 h-EC50 = 1337 mg/l. A chronic reproductive test with the invertebrate Daphnia magna gave a LOEC of 101 mg/l. All the studies compiled on the acute and chronic aquatic toxicity were > 100 mg/L. Thus it is concluded that KCl is not hazardous to freshwater organisms. Taking into considerations the background concentrations of KCl in seawater (380 mg/l K+ and 19,000 mg/l Cl-), it is concluded that there is no reason for further investigations of KCl on marine species. The low concern for the environment is supported by the absence of a bioaccumulation potential for the substance.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No impact if small amount is released to the soil.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **QUICKSEAL (F,M,C)**

Synonyms QUICKSEAL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition. Dust may form explosive mixtures with air.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Difficult to extinguish once burning.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are labelled, protected from light, freezing or physical damage and tightly sealed when not in use. Keep out of reach of children.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT RELEVANT
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Relative density	0.9 to 1.2
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with calcium oxides, bleaching powder, perchlorates, perchloric acid, sodium chlorate, fluorine, nitric acid, sodium nitrate and sodium nitrite.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Acute Oral Toxicity: LD50 (oral) > 5000 mg/kg (rats).
Acute Dermal Toxicity: LD50 (dermal) > 2000 mg/kg (rats).
Acute Inhalation Toxicity: LC50 (Inhalation) = 5800 mg/m3/4hrs (rat).

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m³/4 hours (rat)

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
LD50 (intraperitoneal) > 31600 mg/kg (rat)

Skin Not classified as a skin irritant. Contact may result in mechanical irritation, redness and rash.

Eye Not classified as an eye irritant. However, this product may cause mechanical eye irritation with redness and lacrimation.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Low toxicity to aquatic organisms.

12.2 Persistence and degradability
This product is readily biodegradable.

12.3 Bioaccumulative potential
This product is not expected to bioaccumulate.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse where possible. No special precautions are normally required when handling this product.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SALT**

Synonyms BUTCHERS SALT ● FLOSSY SALT ● HALITE ● NACL ● SODIUM CHLORIDE

1.2 Uses and uses advised against

Uses CHLORIDE SOURCE ● DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CHLORIDE	7647-14-5	231-598-3	>98%
INORGANIC SALT(S)	-	-	<0.8%
WATER	7732-18-5	231-791-2	<0.8%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed
Under normal conditions of use, adverse health effects are not anticipated. This product is generally considered to be of low toxicity.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate fire protection systems.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TRANSLUCENT TO WHITE GRANULES OR POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1413°C
Melting point	801°C
Evaporation rate	NOT AVAILABLE
pH	7 (1 % Solution)
Vapour density	NOT AVAILABLE
Relative density	2.163
Solubility (water)	357 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products
May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed in large quantities. Repeated ingestion of excessive amounts of sodium chloride may cause disturbance of body electrolyte and fluid balance.
LC50 (Inhalation): > 42000 mg/m3/1 hour (rat)
LD50 (Ingestion): 3000 mg/kg (rat)
LD50 (Skin): > 10000 mg/kg (rabbit)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m³/1 hour (rat)

Additional ingredient toxicity values:

SODIUM CHLORIDE (7647-14-5)

LD50 (intraperitoneal)	2602 mg/kg (mouse)
LD50 (intravenous)	645 mg/kg (mouse)
LD50 (subcutaneous)	3000 mg/kg (mouse)
LDLo (intravenous)	300 mg/kg (guinea pig)
LDLo (oral)	8000 mg/kg (rabbit)
LDLo (subcutaneous)	2160 mg/kg (guinea pig)
TDLo (oral)	12357 mg/kg (human)

Skin Contact may result in mild irritation and rash.

Eye Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Aquatic Toxicity: LC50 (water flea) is 2122 mg/L/48 hours; LC50 (fathead minnow) is 6.57 g/L/96 hours.

12.2 Persistence and degradability
Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential
Not expected to bioaccumulate.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SAND SEAL FINE**

Synonyms SAND SEAL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
VEGETABLE MATERIALS	-	-	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TAN POWDER
Odour	MILD ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.3 (5% Suspension)
Vapour density	NOT AVAILABLE
Relative density	0.35
Solubility (water)	INSOLUBLE
Vapour pressure	1 mm Hg @ 20°C
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects

are not anticipated.

Skin	Not classified as a skin irritant. Contact may result in mild irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No information provided.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
No information provided.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards
No information provided.

14.6 Special precautions for user
Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
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CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
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SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

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Prepared by

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SAPP**

Synonyms DISODIUM DIHYDROGEN PYROPHOSPHATE ● DISODIUM PYROPHOSPHATE

1.2 Uses and uses advised against

Uses ACIDIFIER ● BUFFERING AGENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
DISODIUM PYROPHOSPHATE	7758-16-9	231-835-0	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (phosphorus oxides) when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Nuisance dust	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	> 600°C
Evaporation rate	NOT AVAILABLE
pH	4 - 5 (10% Solution)
Vapour density	NOT AVAILABLE
Relative density	1.35 to 1.41
Solubility (water)	119 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (phosphorus oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Low toxicity. Ingestion of large quantities may result in nausea, vomiting and gastrointestinal irritation.

Ingestion of large quantities may also result in serious disturbances in calcium metabolism.

LD50 (Ingestion): 2650 mg/kg (mouse)
LD50 (Intraperitoneal): 1 g/kg (mouse)
LD50 (Intravenous): 59 mg/kg (mouse)
LD50 (Subcutaneous): 480 mg/kg (mouse)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
DISODIUM PYROPHOSPHATE	2650 mg/kg (mouse)	> 2000 mg/kg (rat)	> 0.58 mg/L/4hrs (rat)

Additional ingredient toxicity values:

DISODIUM PYROPHOSPHATE (7758-16-9)
LD50 (intraperitoneal) 1 g/kg (mouse)
LD50 (intravenous) 59 mg/kg (mouse)
LD50 (subcutaneous) 480 mg/kg (mouse)

Skin Low to moderate irritant. Prolonged or repeated contact may result in irritation and rash.

Eye Low to moderate irritant. Contact may result in mild irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Low irritant. Over exposure may result in irritation of the nose and throat, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No information provided.

12.2 Persistence and degradability
Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **AVAGREEN LUBE**

Synonyms AVA GREEN LUBE ● GREEN LUBE

1.2 Uses and uses advised against

Uses DRILLING FLUID ● LUBRICANT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
METHYL ESTERS OF FATTY ACIDS	68990-52-3	273-606-8	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture
Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW LIQUID
Odour	SWEET VEGETABLE ODOUR
Flammability	CLASS C2 COMBUSTIBLE
Flash point	180°C
Boiling point	> 300°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	0.91 to 0.92
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	260°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products
May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Skin	Not classified as a skin irritant. Contact may cause temporary mild skin irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
LC50 (Fish) 48 h: > 10000 µg / L
LC50 (Mollusc) 48 h: > 10000 µg /L
LC50 (Amphibious) 48 h: > 7600 µg/L

12.2 Persistence and degradability
70% 28 days (method OECD 301 B

12.3 Bioaccumulative potential
Low potential for bioaccumulation.

12.4 Mobility in soil
It is not volatile and not expected to persist in the environment.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
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EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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[End of SDS]

SAFETY DATA SHEET

AVAPOLYMER 5050

Issue Date 12-Apr-2017 **Revision date** 09-Aug-2022 **Version** 1.1
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

1

Product identifier

Product Name AVAPOLYMER 5050

Product Code NDF00252

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use shale stabilizer

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification
May be harmful in contact with skin
General Hazards
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Not applicable

Mixture

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	-	100

Section 4: FIRST AID MEASURES

Description of first aid measures

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Water spray (fog). Carbon dioxide (CO2).

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
Hazchem code	Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.
For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible materials	None known

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls	Showers Eyewash stations

Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid		
Appearance	Powder	**Odor**	Slight.
Color	No information available	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	8.0 - 11.0	20 g/L solution
Melting point / freezing point		No data available
Boiling point / boiling range		No data available
Flash point		Not applicable
Evaporation rate		No data available
Flammability (solid, gas)		No data available
Flammability Limit in Air		No data available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density		No data available
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No data available
Hyphen		No data available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity Stable.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information .

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available

Symptoms No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 27,000.00 mg/kg
ATEmix (dermal) 2,002.00 mg/kg

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity
40 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
40 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Unknown aquatic toxicity	100 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability	No information available.

Bioaccumulative potential

Bioaccumulation	No information available.

Mobility

Mobility in soil	No information available.
Mobility	No information available.

Other adverse effects

Other adverse effects	No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG	Not regulated
IATA	Not Regulated
IMDG	Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 12-Apr-2017

Revision date 09-Aug-2022

Revision Note
No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

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End of Safety Data Sheet

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **BARITE POWDER**

Synonyms BARITE (API 13A SECTION 7) ● NEWBAR ● RHEOBAR

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE ● WEIGHTING AGENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Carcinogenicity: Category 1A
Specific Target Organ Toxicity (Repeated Exposure): Category 2

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H350i May cause cancer by inhalation.
H373 May cause damage to organs through prolonged or repeated exposure.

Prevention statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage statements

P405 Store locked up.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
BARIUM SULPHATE	7727-43-7	231-784-4	>89%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	1 to 5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Repeated exposure to crystalline silica may result in lung fibrosis (silicosis). Principal symptoms of silicosis are coughing and breathlessness. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (sulphur oxides) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Barium sulphate	SWA [AUS]	--	10	--	--
Barium sulphate (inhalable)	SWA [Proposed]	--	4	--	--
Barium sulphate (respirable)	SWA [Proposed]	--	1.35	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OFF-WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT RELEVANT
Melting point	> 1300°C
Evaporation rate	NOT RELEVANT

9.1 Information on basic physical and chemical properties

pH	8.2 (20% Slurry)
Vapour density	NOT RELEVANT
Relative density	4.20
Solubility (water)	INSOLUBLE
Vapour pressure	NOT RELEVANT
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT RELEVANT
Autoignition temperature	NOT RELEVANT
Decomposition temperature	NOT RELEVANT
Viscosity	NOT RELEVANT
Explosive properties	NOT EXPLOSIVE
Oxidising properties	NON OXIDISING
Odour threshold	NOT RELEVANT

9.2 Other information

Bulk density	~1.5 kg/L

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve toxic gases (sulphur oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
BARIUM SULPHATE	> 5000 mg/kg (rat)	> 2000 mg/kg (rat)	--

Skin Contact may result in irritation, redness, pain and rash.

Eye Contact may result in irritation, lacrimation, pain, redness and blurring or dimness of vision.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity May cause cancer by inhalation. Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, coughing, dizziness, drowsiness and headache.

STOT - repeated exposure Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fish Toxicity: LC50 (Rainbow trout) > 7500 ppm/96hrs; LC50 (Fresh Water Trout) > 21,000 ppm/96hrs; LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs.

12.2 Persistence and degradability

Barium sulphate (major ingredient of barite (60-100%)) is insoluble in water and not biodegradable.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **BENTONITE POWDER**

Synonyms AVAGEL ● BENTONIL HR ● HISWELL ● MAXIGEL ● NATURALGEL ● NEWGEL ● RHEOBEN ● RHEOBEN NT ● SODIUM BENTONITE ● SODIUM MONTMORILLONITE

1.2 Uses and uses advised against

Uses DRILLING FLUID

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Specific Target Organ Toxicity (Repeated Exposure): Category 2

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H373 May cause damage to organs through prolonged or repeated exposure.

Prevention statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

Response statements

P314 Get medical advice/attention if you feel unwell.

Storage statements

None allocated.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
BENTONITE	1302-78-9	215-108-5	90 to 98%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	2 to 10%
SODA ASH	-	-	2 to 4%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Repeated exposure to crystalline silica may result in lung fibrosis (silicosis). Principal symptoms of silicosis are coughing and breathlessness. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure packaging are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BROWN POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	1100°C to 1200°C (Fusion Point)
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	2.7
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT

9.1 Information on basic physical and chemical properties

Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT EXPLOSIVE
Oxidising properties	NON OXIDISING
Odour threshold	NOT AVAILABLE

9.2 Other information

Bulk density	~ 0.9 kg/L

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity Data available for the ingredients:
QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
LCLo (inhalation) = 300 ug/m³/10 years (human)
TCLo (inhalation) = 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis)
BENTONITE (1302-78-9):
LD50 (intravenous) = 35 mg/kg (rat)
LD50 (oral): > 2000mg/kg (rat)
LDLo (intravenous) = 10 mg/kg (dog)
Inhalation LC 50: > 5.27 mg/L, 4hr (rat)

Additional ingredient toxicity values:

BENTONITE (1302-78-9)

LD50 (intravenous)	35 mg/kg (rat)
LDLo (intravenous)	10 mg/kg (dog)

Skin

Not classified as a skin irritant. Contact may result in mild irritation and dermatitis.

Eye

Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation

Not classified as causing skin or respiratory sensitisation.

Mutagenicity

Insufficient data available to classify as a mutagen.

Carcinogenicity

This product contains crystalline silica which is classified as carcinogenic to humans (IARC Group 1). However, there is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis. Therefore, preventing the onset of silicosis will also reduce the cancer risk.

Reproductive

Insufficient data available to classify as a reproductive toxin.

STOT - single exposure

Not classified as causing organ damage from single exposure.

STOT - repeated exposure

Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.

Aspiration

Not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Bentonite (1302-78-9):
EC50 Daphnia > 100 mg/l, 48 hours
EC50 Freshwater algae > 100 mg/l, 72 hours
LC50 Freshwater fish = 16000 mg/l, 96 hours
LC50 Marine water fish = 2800 - 3200 mg/l, 24 hours
EC50 Coon stripe shrimp (Pandalus danae) = 24.8 mg/l, 96 hours
EC50 Dungeness or edible crab (Cancer magister) = 81.6 mg/l, 96 hours
LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss) = 19000 mg/l, 96 hours

12.2 Persistence and degradability

Not relevant for inorganic substances.

12.3 Bioaccumulative potential

Will not bioaccumulate.

12.4 Mobility in soil

Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

12.5 Other adverse effects

The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse where possible. No special precautions are normally required when handling this product.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

SAFETY DATA SHEET

GageTrol™

Issue Date 15-Mar-2017 **Revision date** 23-Mar-2022 **Version** 1.1
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name GageTrol™

Product Code NDF00018

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use filtration control agent

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification

General Hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	-	100

Section 4: FIRST AID MEASURES

Description of first aid measures

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials Strong oxidizing agents Strong acids

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid		
Appearance	Powder	**Odor**	Slight.
Color	Off-white	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	9.0 - 10.5	4% solution
Melting point / freezing point		Not applicable
Boiling point / boiling range		Not applicable
Flash point		Not applicable
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.5	
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	30-45 lb/ft3 (480-720 kg/m^3)
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizing agents. Strong acids.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information .

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available

Symptoms No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity
100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 15-Mar-2017

Revision date 23-Mar-2022

Revision Note
No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

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End of Safety Data Sheet

SAFETY DATA SHEET

Monoethylene Glycol (MEG)

Issue Date 18-May-2017 **Revision date** 26-Mar-2024 **Version** 1.2
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name Monoethylene Glycol (MEG)

Product Code NDF00270

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use hydrate-control additive

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand); 1-800-424-9300 (International Number);

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4 - (H302)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)

Label elements

Exclamation mark
Health hazard



Signal word
Warning

Hazard statements
H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Precautionary Statements - Response
Get medical advice/attention if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification
Harmful to aquatic life
General Hazards
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Chemical name	CAS No	Weight-%	REACH registration number
Ethylene glycol	107-21-1	100	01-2119456816-28-XXXX

Section 4: FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical, CO2, alcohol-resistant foam or water spray.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Wash contaminated clothing before reuse. Handle in accordance with good industrial

hygiene and safety practice. Wash thoroughly after handling.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

Incompatible materials Strong oxidizing agents Strong acids Strong bases Aldehydes Aluminum

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Australia
Ethylene glycol 107-21-1	10 mg/m³ 20 ppm 52 mg/m³ 40 ppm STEL 104 mg/m³ STEL

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance liquid
Color colorless

Odor sweet.
Odor threshold No information available

Property	Values	Remarks • Method
pH		No information available
Melting point / freezing point	-13 °C	
Boiling point / boiling range	196 °C	
Flash point	111 °C	
Evaporation rate	1	
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available

Vapor pressure		No data available
Vapor density		No data available
Relative density	1.11	
Water solubility	Miscible in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature	400 °C	
Hyphen		No information available
Kinematic viscosity		
Dynamic viscosity		

Other information

Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizing agents. Strong acids. Strong bases. Aldehydes. Aluminum.

Hazardous decomposition products

Hazardous Decomposition Products Aldehydes. Alcohols.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available Harmful if swallowed (based on components)

Symptoms No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 500.00 mg/kg

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene glycol	= 500 mg/kg (Stima puntuale della tossicità acuta convertita)	= 10600 mg/kg (Rat)	> 2.5 mg/L (Rat) 6 h

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis).

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethylene glycol	EC50: 6500 - 13000mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 14 - 18mL/L (96h, Oncorhynchus mykiss) LC50: 40000 - 60000mg/L (96h, Pimephales promelas) LC50: =16000mg/L (96h, Poecilia reticulata) LC50: =27540mg/L (96h, Lepomis macrochirus) LC50: =40761mg/L (96h, Oncorhynchus mykiss) LC50: =41000mg/L (96h, Oncorhynchus mykiss)	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	EC50: =46300mg/L (48h, Daphnia magna)

Persistence and degradability

Persistence and degradability Readily biodegradable.

Bioaccumulative potential

Bioaccumulation No information available.

Component Information

Chemical name	Partition coefficient
Ethylene glycol	-1.36

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 18-May-2017

Revision date 26-Mar-2024

Revision Note
No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

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End of Safety Data Sheet

Safety Data Sheet

BONDERITE S-AD 85 ACID INHIBITOR ADDITIVE known as RODINE 85 20LT

SDS No. : 319615
V001.7
Date of issue: 18.08.2022

Section 1. Identification of the substance/preparation and of the company/undertaking

Product name: BONDERITE S-AD 85 ACID INHIBITOR ADDITIVE known as RODINE 85 20LT

Intended use: Acid inhibitor additive

Supplier:
Henkel Australia Pty Ltd
135-141 Canterbury Road
Kilsyth, Victoria, 3137
Australia

Phone: +61 (3) 9724 6444

Emergency information: 24 HOUR EMERGENCY CONTACT NUMBER: 1800 032 379

Section 2. Hazards identification

Classification of the substance or mixture
Hazardous according to the criteria of Safe Work Australia.

GHS Classification:

Hazard Class	Hazard Category	Route of Exposure
Acute toxicity	Category 4	Oral
Skin corrosion	Category 1	
Skin corrosion	Category 1B	
Serious eye damage/eye irritation	Category 1	
Skin sensitizer	Category 1	
Carcinogenicity	Category 2	
Target Organ Systemic Toxicant - Repeated exposure	Category 2	

Hazard pictogram:



Signal word: Danger

Hazard statement(s):
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s):

Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist/vapours.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/… if you feel unwell.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340+P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
P305+P351+P338+P315 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Get immediate medical advice/attention.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations.

Dangerous Goods information:
Classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

Section 3. Composition / information on ingredients

General chemical description: Mixture

Identity of ingredients:

Chemical ingredients	CAS-No.	Proportion
Formaldehyde polymer with o-toluidinium chloride	68492-82-0	10- < 30 %
prop-2-yn-1-ol	107-19-7	3- < 5 %
1,3-Diethyl-2-thiourea	105-55-5	3- < 10 %
methanol	67-56-1	< 1 %
non hazardous ingredients~		60- <= 100 %

Section 4. First aid measures

Ingestion:
Do not induce vomiting.
Call a physician immediately.

Skin:
In case of contact, immediately remove contaminated clothing and flush skin with copious amounts of water.
Seek medical advice.

Eyes: Immediately flush eyes with water for at least 15 minutes, while holding eyelids open.
Seek medical attention at once.

Inhalation: Move to fresh air, consult doctor if complaint persists.

First Aid facilities: Eye wash and safety shower
Normal washroom facilities

Medical attention and special treatment: Treat symptomatically.

Section 5. Fire fighting measures

Suitable extinguishing media: Water fog.
Dry chemical.
Carbon dioxide.

Decomposition products in case of fire: In case of fire toxic gases can be released.
Chlorine.
Oxides of nitrogen.
Oxides of sulfur.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Hazchem code: 2X

Section 6. Accidental release measures

Personal precautions: See advice in section 8
Avoid skin and eye contact.

Environmental precautions: Do not empty into drains / surface water / ground water.

Clean-up methods: Remove with liquid-absorbing material (sand, peat, sawdust).
Scrape up spilled material and place in a closed container for disposal.
Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

Precautions for safe handling: See advice in section 8
Ensure that workrooms are adequately ventilated.
Avoid breathing vapors or mists of this product.

Conditions for safe storage: Store in a cool, dry, well-ventilated area.
Keep away from heat and direct sunlight.
Must be stored in the facility for the dangerous goods

Section 8. Exposure controls / personal protection

National exposure standards:

Ingredient [Regulated substance]	form of exposure	TWA (ppm)	TWA (mg/m3)	Peak Limit. (ppm)	Peak Limit. (mg/m3)	STEL (ppm)	STEL (mg/m3)
PROPARGYL ALCOHOL 107-19-7		1	2.3				

METHYL ALCOHOL 67-56-1		200	262				
METHYL ALCOHOL 67-56-1						250	328

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Eye protection: Wear chemical goggles and face shield.

Skin protection: Use of protective coveralls and long sleeves is recommended.
Recommended gloves include butyl rubber and neoprene.

Respiratory protection: If inhalation risk exists, wear a respirator or air supplied mask complying with the requirements of AS/NZS 1715 and AS/NZS 1716.

Section 9. Physical and chemical properties

Appearance: Red-brown
dark

Odor: characteristic

pH: 0.3

Density: 1.04 - 1.06 g/cm3

Solubility in water: Miscible

Section 10. Stability and reactivity

Stability: Stable under normal conditions of temperature and pressure.

Conditions to avoid: Excessive heat.

Incompatible materials: Alkalis.
Alkali metals.
Fluorine.
Organic materials.
Oxidizing agents.

Hazardous decomposition products: In case of fire toxic gases can be released.

Chlorine.
Oxides of nitrogen.
Oxides of sulfur.

Section 11. Toxicological information

Health Effects:

Ingestion: If ingested, severe burns of the mouth and throat may occur, as well as perforation of the esophagus and the stomach.
Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Skin: Causes burns.
May cause skin sensitization.

Eyes: Contact with the eyes can cause severe burns and permanent eye damage.

Inhalation: May cause respiratory tract irritation.
Excessive inhalation of this material causes headache, dizziness, nausea and incoordination.

Chronic effects:

methanol 67-56-1: Neurological symptoms; irritation to the nasal mucous membranes through exposure to higher vapor concentrations; headaches, blurred vision and nausea; damage to the skin due to repeated contact; prenatal toxic effects were seen in rats and mice.

Aggravated med. condition: Pre-existing skin disorders.

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
prop-2-yn-1-ol 107-19-7	LD50	56.4 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
1,3-Diethyl-2-thiourea 105-55-5	LD50 LD50 Acute toxicity estimate (ATE)	930 mg/kg > 1,000 - < 2,000 mg/kg 1,001 mg/kg	oral dermal dermal		mouse rat	not specified OECD Guideline 402 (Acute Dermal Toxicity) Expert judgement
methanol 67-56-1	Acute toxicity estimate (ATE)	300 mg/kg	oral			Expert judgement

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
1,3-Diethyl-2-thiourea 105-55-5	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
methanol 67-56-1	not irritating	20 h	rabbit	BASF Test

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
1,3-Diethyl-2-thiourea 105-55-5	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
methanol 67-56-1	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
1,3-Diethyl-2-thiourea 105-55-5	Sensitizing	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method
methanol 67-56-1	not sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
1,3-Diethyl-2-thiourea 105-55-5	negative positive positive	bacterial reverse mutation assay (e.g Ames test) single cell gel/comet assay in mammalian cells mammalian cell gene mutation assay	with and without without without		not specified not specified Mammalian Cell Gene Mutation Assay
1,3-Diethyl-2-thiourea 105-55-5	negative	oral: gavage		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
methanol 67-56-1	negative negative negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian cell micronucleus test mammalian cell gene mutation assay	with and without without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) not specified equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
methanol 67-56-1	negative	intraperitoneal		mouse	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Repeated dose toxicity:

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
1,3-Diethyl-2-thiourea 105-55-5	NOAEL=7.35 mg/kg	oral: feed	7 wdaily	rat	not specified
1,3-Diethyl-2-thiourea 105-55-5	LOAEL=10 mg/kg	oral: feed	52 wdaily	rat	not specified
methanol 67-56-1	NOAEL=6.63 mg/l	inhalation: vapour	4 weeks6 h/d, 5 d/w	rat	equivalent or similar to OECD Guideline 412 (Repeated Dose Inhalation Toxicity: 28/14-Day)
methanol 67-56-1	NOAEL=0.13 mg/l	inhalation: vapour	12 m20 h/d	rat	equivalent or similar to OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water., Harmful to aquatic organisms., May cause long-term adverse effects in the aquatic environment.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
prop-2-yn-1-ol 107-19-7	LC50	4.6 mg/l	Fish	96 h	Leuciscus idus	DIN 38412-15
prop-2-yn-1-ol 107-19-7	EC50	11 mg/l	Daphnia	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
prop-2-yn-1-ol 107-19-7	EC50	> 18 mg/l	Algae	8 d	Scenedesmus quadricauda	OECD Guideline 201 (Alga, Growth Inhibition Test)
prop-2-yn-1-ol 107-19-7	EC0	< 18 mg/l	Algae	8 d	Scenedesmus quadricauda	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,3-Diethyl-2-thiourea 105-55-5	LC50	910 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,3-Diethyl-2-thiourea 105-55-5	EC50	56 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
1,3-Diethyl-2-thiourea 105-55-5	EC50	310 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,3-Diethyl-2-thiourea 105-55-5	NOEC	73 mg/l	Algae	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
methanol 67-56-1	LC50	15,400 mg/l	Fish	96 h	Lepomis macrochirus	EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians)
methanol 67-56-1	NOEC	7,900 mg/l	Fish	200 h	Oryzias latipes	OECD Guideline 210 (fish early lite stage toxicity test)
methanol 67-56-1	EC50	18,260 mg/l	Daphnia	96 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
methanol 67-56-1	EC50	22,000 mg/l	Algae	96 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
methanol 67-56-1	IC50	> 1,000 mg/l	Bacteria	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method

prop-2-yn-1-ol 107-19-7		aerobic	37 %	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)
1,3-Diethyl-2-thiourea 105-55-5	not readily biodegradable.	aerobic	3 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
methanol 67-56-1	readily biodegradable	aerobic	82 - 92 %	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
prop-2-yn-1-ol 107-19-7	-0.35				25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
1,3-Diethyl-2-thiourea 105-55-5	0.57					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
methanol 67-56-1		< 10	72 h	Leuciscus idus melanotus		not specified
methanol 67-56-1	-0.77					other guideline:

Section 13. Disposal considerations

Waste disposal of product: Collection and delivery to recycling enterprise or other registered elimination institution.

Recommended cleanser: Clean the packaging with water.

Disposal for uncleaned package: Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Section 14. Transport information

Road and Rail Transport:

Dangerous Goods information: Classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).
UN no.: 3265
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Propargyl alcohol)
Class or division: 8
Packing group: III
Hazchem code: 2X
Emergency information: Refer to the Australian Emergency Response Guide Book

Marine transport IMDG:

UN no.: 3265
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Propargyl alcohol)
Class or division: 8
Packing group: III
EmS: F-A ,S-B
Seawater pollutant: -

Air transport IATA:

UN no.:	3265
Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s. (Propargyl alcohol)
Class or division:	8
Packing group:	III
Packing instructions (passenger)	852
Packing instructions (cargo)	856

Section 15. Regulatory information

SUSMP Poisons Schedule 6

Section 16. Other information

Abbreviations/acronyms:

ADGC - Australian Dangerous Goods Code
LD 50: Lethal Dose 50%
OECD: Organization for Economic Cooperation and Development
NOAEL: No Observed Adverse Effect Level
LC 50: Lethal Concentration 50%
STEL - Short term exposure limit
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
TWA - Time weighted average
ADNR: Regulations for the Carriage of Dangerous Goods on the Rhine.
AIIC - Australian Inventory of Industrial Chemicals (AIIC)
AICIS - Australian Industrial Chemicals Introduction Scheme

Reason for issue: Reviewed MSDS. Reissued with new date. involved chapters: 1-16

Date of previous issue: 19.05.2021

Disclaimer:

The percentage weight (% w/w) of ingredients is not to be taken as a specification guaranteed by Henkel Australia Pty. Limited, but only as an approximate guide to the content of hazardous ingredients in the material. The information contained herein does not constitute a guarantee by Henkel Australia Pty. Limited concerning the properties of the material.
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SAFETY DATA SHEET

VICTOSAL NS

A safety data sheet is not required for this product under Article 31 of REACH

Issuing Date 29-Jul-2016 **Revision date** 22-Jul-2022 **Version** 1.5

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code NDF00184

Product Name VICTOSAL NS

Pure substance/mixture Substance

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Viscosifier

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier
Newpark Drilling Fluids S.p.A.
Via Salaria 1313/C
00138 ROMA (Italy)
For further information, please contact

Contact Point Telephone: + 39 06 8856111
Fax: +39 06 8889363
Website: www.newpark.com

E-mail address hse-hqit@newpark.com

1.4. Emergency telephone number

Emergency Telephone - §45 - (EC)1272/2008	
Europe	**112**
Croatia	+385 1 7776 920 ; +385 01 2348 342 (Centar za kontrolu otrovanja, 24 sata)
France	+(33)-975181407
Germany	0800-181-7059; +(49)- 69643508409
Hungary	+(36)-18088425
Italy	800-789-767; +(39)-0245557031 Milano 24/24 Ospedale Niguarda Ca'grande Piazza ospedale maggiore 3 +39 0266101029 Roma 24/24 Policlinico Gemelli Largo Agostino Gemelli 8 +39 063054343
Netherlands	+(31)-858880596
Romania	(+40)-37-6300026

Spain	900-868538; +(34)-931768545
Switzerland	145, (+41) 435082011
United Kingdom	+(44)-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]
Hazard statements
This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.3. Other hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Weight-%	REACH registration number	EC No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Starch 9005-25-8	100	No data available	232-679-6	No data available	-	-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate
No information available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Ingestion Clean mouth with water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Fine dust dispersed in air may ignite.

Hazardous combustion products Carbon oxides.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal. Avoid generation of dust.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510) 13: Non-combustible solids that cannot be assigned to any other storage classes

7.3. Specific end use(s)

Identified uses
Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Starch 9005-25-8	-	-	TWA: 10 mg/m³	TWA: 10.0 mg/m³	TWA: 4 mg/m³ TWA: 10 mg/m³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Starch 9005-25-8	-	TWA: 4.0 mg/m³	-	-	-
Chemical name	France	Germany	Germany MAK	Greece	Hungary
Starch 9005-25-8	-	-	-	TWA: 10 mg/m³ TWA: 5 mg/m³	-
Chemical name	Ireland	Italy	Italy REL	Latvia	Lithuania
Starch 9005-25-8	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³	-	TWA: 10 mg/m³	-	-
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Starch 9005-25-8	TWA: 10 mg/m³	-	-	-	TWA: 10 mg/m³

Chemical name	Sweden	Switzerland	United Kingdom
Starch 9005-25-8	-	TWA: 3 mg/m³	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³

Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls No information available.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Use eye protection according to EN

166, designed to protect against spray mists.

Skin and body protection Wear suitable protective clothing. (EN 340).

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. (EN 136, EN 140, EN 141, EN 143, EN 149, EN 405).

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	White
Odor	No information available.
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		
Lower flammability limit:		
Flash point		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
pH		Not applicable
pH (as aqueous solution)		No information available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Vapor pressure		No information available
Relative density	0.55	
Bulk density		
Liquid Density		
Vapor density		No information available
Particle characteristics		No information available
Particle Size		
Particle Size Distribution		

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Not applicable

Explosive properties: Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard

Oxidizing properties Not applicable

9.2.2. Other safety characteristics

No information available Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Not reactive under normal conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid dust formation.

10.5. Incompatible materials

Incompatible materials Strong acids.

10.6. Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Numerical measures of toxicity
No information available

Acute toxicity

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Not applicable.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
Waste codes / waste designations according to EWC / AVV	Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IATA

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user Special Provisions	None

IMDG

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN/ID no	Not Regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user Special Provisions	None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Germany

Water hazard class (WGK) slightly hazardous to water (WGK 1)

Italy

-D. LGs. 81/2008 (single text on the protection of health and safety in the workplace) and subsequent amendments and Directive 2009/161/EU-assessment of chemical risk under title IX
-Legislative Decree 3 April 2006, no 152 (environmental standards)
-"Seveso III Directive" – Legislative Decree of 26 June 2015, n° 105 (Implementation of the Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report None

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend
SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date 29-Jul-2016

Revision date 22-Jul-2022

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Disclaimer
According to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, as amended by Regulation (EU) No. 2015/830. This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SODA ASH**

Synonyms SODA ASH DENSE ● SODIUM CARBONATE

1.2 Uses and uses advised against

Uses DRILLING AID

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Serious Eye Damage / Eye Irritation: Category 1
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Prevention statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.

Storage statements

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CARBONATE	497-19-8	207-838-8	>97%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Sodium Carbonate (total dust)	SWA [AUS]	--	10	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	854°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
	2.533

9.1 Information on basic physical and chemical properties

Relative density	
Solubility (water)	170 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CARBONATE	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/m³ (rat) (AICIS)

Additional ingredient toxicity values:

SODIUM CARBONATE (497-19-8)

LD50 (intraperitoneal) 117 mg/kg (mouse)

LD50 (subcutaneous) 2210 mg/kg (mouse)

Skin Contact may result in irritation, redness, rash and dermatitis.

Eye Contact may result in irritation, lacrimation, pain, redness and possible serious eye damage.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. Carbonate ions are neutralised under physiological conditions to form bicarbonate ions and/or carbon dioxide, which are major products of all human metabolic activities; therefore, systemic toxicity is not expected.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fishes, Lepomis macrochirus, LC50, 96 h, 300 mg/l. Crustaceans, Ceriodaphnia dubia, EC50, 48 h, 200 - 227 mg/l.

12.2 Persistence and degradability

Not applicable for inorganic substances. The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

If sodium carbonate is emitted to soil it can escape to atmosphere as carbon dioxide, precipitate as a metal carbonate, form complexes or stay in solution.

12.5 Other adverse effects

WATER: If released to waterways, alkaline products may change the pH of the waterway. Fish will die if the pH reaches 10-11 (goldfish 10.9, bluegill 10.5). SOIL: May leach to groundwater with toxic effects on aquatic life as above. ATMOSPHERE: Not expected to reside in the atmosphere. Drops or particles released to atmosphere should be removed by gravity and/or be rained out.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SODIUM BICARBONATE**

Synonyms BAKING SODA ● BICARBONATE OF SODA ● CARBONIC ACID, MONOSODIUM SALT ● MONOSODIUM CARBONATE ● SODIUM ACID CARBONATE ● SODIUM HYDROGEN CARBONATE

1.2 Uses and uses advised against

Uses PH CONTROL

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM BICARBONATE	144-55-8	205-633-8	>99%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

No adverse health effects expected if the product is handled in accordance with the SDS and the product label.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters
Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Sodium Bicarbonate (total dust)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	When using large quantities or where heavy contamination is likely, wear dust-proof goggles.
Hands	When using large quantities or where heavy contamination is likely, wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	854°C
Evaporation rate	NOT AVAILABLE
pH	8 (1% Solution)
Vapour density	NOT AVAILABLE
Relative density	2.533
Solubility (water)	170 g/L @ 25°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. Sodium bicarbonate can neutralise the gastric juices in the stomach. During neutralisation, carbon dioxide gas is evolved and may cause stretching of the stomach, and with very large doses possible damage or rupture.

LD50 (Ingestion): 3360 mg/kg (mouse)
LC50 (inhalation): 4.74 mg/L (rat)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM BICARBONATE	> 4000 mg/kg (rat)	--	> 4.74 mg/L/4.5hrs (rat)

Skin Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Oncorhynchus mykiss) = 7.700 mg/l/96hrs.
LC50 (Lepomis macrochirus) = 7.100 mg/l/96hrs.
EC50 (Crustaceans, Daphnia magna) = 4.100 mg/l/48hrs
LOEC (Crustaceans, Daphnia magna) = 3.100 mg/l/48hrs.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

High mobility in water and soil/sediments.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SODIUM SULPHITE**

Synonyms SODIUM SULFITE

1.2 Uses and uses advised against

Uses ANTIOXIDANT ● FOOD PRESERVATIVE ● LABORATORY REAGENT ● PAPER INDUSTRY ● PHOTOGRAPHIC DEVELOPER ● REDUCING AGENT ● WATER TREATMENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Serious Eye Damage / Eye Irritation: Category 1
Contact with acids liberates toxic gas.

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms



Hazard statements

AUH031	Contact with acids liberates toxic gas.
H302	Harmful if swallowed.
H318	Causes serious eye damage.

Prevention statements

P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P330	Rinse mouth.

Storage statements

None allocated.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM SULPHITE	7757-83-7	231-821-4	>97%
SODIUM SULPHATE	7757-82-6	231-820-9	<2.5%
SODIUM CARBONATE	497-19-8	207-838-8	<0.1%
WATER	7732-18-5	231-791-2	<0.1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Urgent hospital treatment is likely to be needed. If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower are recommended.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve sulphur oxides and sodium oxides when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Sodium Carbonate (total dust)	SWA [AUS]	--	10	--	--

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Full-face Class P3 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE CRYSTALLINE SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT

9.1 Information on basic physical and chemical properties

Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	9.0 to 10.5
Vapour density	NOT AVAILABLE
Relative density	2.6
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Contact with acids liberates toxic gas.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Avoid exposure to air and moisture.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid). Strong reducing agent.

10.6 Hazardous decomposition products

May evolve sulphur oxides and sodium oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM SULPHITE	820 mg/kg (mouse); 3560 mg/kg (rat)	> 2000 mg/kg (rat)	> 5500 mg/m3/4hrs (rat)
SODIUM SULPHATE	5989 mg/kg (mouse)	--	--
SODIUM CARBONATE	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/m³ (rat) (AICIS)

Additional ingredient toxicity values:

SODIUM SULPHITE (7757-83-7)

LD50 (intraperitoneal)	950 mg/kg (mouse)
LD50 (intravenous)	175 mg/kg (mouse)
LDLo (intravenous)	400 mg/kg (cat)
LDLo (oral)	2825 mg/kg (rabbit)
LDLo (subcutaneous)	600 mg/kg (rabbit)

SODIUM SULPHATE (7757-82-6)

LD50 (intravenous)	1220 mg/kg (rabbit)
LDLo (intravenous)	1220 mg/kg (mouse)
TDLo (oral)	14 g/kg (mouse - 8-12 days pregnant)
TDLo (subcutaneous)	806 mg/kg/26 weeks intermittently (mouse)

SODIUM CARBONATE (497-19-8)

LD50 (intraperitoneal)	117 mg/kg (mouse)
LD50 (subcutaneous)	2210 mg/kg (mouse)

Skin Contact may result in irritation, redness, rash and dermatitis.

Eye Contact may result in irritation, lacrimation, pain, redness and possible serious eye damage.

Sensitisation Some individuals are hypersensitive to sulphites and may experience adverse reactions following exposure. Individuals known to be hypersensitive or with existing respiratory problems (eg asthma) are advised to avoid exposure.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in mucous membrane irritation of the respiratory tract, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Cover spill with soda ash or sodium bicarbonate. Mix and spray with water, may be effervescent. Wait until reaction is complete, scoop into a large beaker and cautiously add equal volume of sodium hypochlorite (reaction may be vigorous). Add more water, stir and allow to stand (~1hr). Dilute and neutralise. Absorb with sand/similar dispose of to an approved landfill site, or alternatively (for small amounts) flush to sewer with large excess of water.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SPA**

Synonyms SODIUM POLYACRYLATE

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ACRYLATE - ACRYLAMIDE COPOLYMER(S)	-	-	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition. As with many solids, any dust that is generated may be explosive if mixed with air in critical proportions and in the presence of a source of ignition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Acrylamide	SWA [AUS]	--	0.03	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CREAM GRANULAR SOLID
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	0.8
Solubility (water)	10 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	5 to 10 %

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low toxicity. Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation, rash and dermatitis.
Eye	Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	Insufficient data available to classify as a carcinogen. This product may contain trace amounts of residual acrylamide, which is classified as a probable human carcinogen (IARC Group 2A). However, due to the very low levels present, adverse health effects are not anticipated with normal use.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2 mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg]

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

ACRYLIC - ACRYLAMIDE RESINS: These resins are generally of low toxicity. Toxicity increases with presence of significant concentrations of acrylic - acrylamide monomers. These monomers have been linked with the development of skin sensitisation.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **STRATA-VANGUARD**

Synonyms STRATA VANGUARD

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	<30%
DIATOMACEOUS EARTH, FLUX CALCINED	68855-54-9	272-489-0	<15%
FULLERS EARTH	8031-18-3	617-052-0	<10%
LIMESTONE (CALCIUM CARBONATE)	1317-65-3	215-279-6	<10%
CRISTOBALITE	14464-46-1	238-455-4	<5%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<2%
MAGNESIUM OXIDE	1309-48-4	215-171-9	<1%
1,3 BUTADIENE/STYRENE COPOLYMERS	9003-55-8	618-370-2	<50%
2-PROPENENITRILE-1,3-BUTADIENE RUBBER	9003-18-3	618-357-1	<50%
NATURAL RUBBER	9006-04-6	232-689-0	<50%
POLYISOPRENE	9003-31-0	618-362-9	<50%
POLYETHYLENE	9002-88-4	618-339-3	<3%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Calcium carbonate (Limestone, Marble, Whiting)	SWA [AUS]	--	10	--	--
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--
Cristobalite (respirable dust)	SWA [AUS]	--	0.05	--	--
Magnesium oxide (fume)	SWA [AUS]	--	10	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face Wear dust-proof goggles.

Hands Wear PVC or rubber gloves.

Body When using large quantities or where heavy contamination is likely, wear coveralls.

Respiratory Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter or a Full-face Class P3 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TAN COLOURED POWDER
Odour	MILD ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.3 (5% Suspension)
Vapour density	NOT AVAILABLE
Relative density	2.1
Solubility (water)	INSOLUBLE
Vapour pressure	1 mm Hg @ 20°C
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid contact with incompatible substances.

10.5 Incompatible materials
Incompatible with acids (e.g. nitric acid). Also incompatible with oxygen difluoride, chlorine and trifluoride.

10.6 Hazardous decomposition products
May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity Data available for the ingredients:
CRISTOBALITE (14464-46-1):
TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)
QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
LCLo (inhalation) 300 ug/m³/10 years (human)
TCLo (inhalation) 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis)
CELLULOSE (9004-34-6):
LC50 (inhalation) > 5800 mg/m³/4 hours (rat)
LD50 (ingestion) > 5000 mg/kg (rat)
LD50 (intraperitoneal) > 31600 mg/kg (rat)
LD50 (skin) > 2000 mg/kg (rabbit)
POLYETHYLENE (9002-88-4):
LDLo (ingestion) 3000 mg/kg (rat)
MAGNESIUM OXIDE (1309-48-4):
TCLo (inhalation) 400 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m³/4 hours (rat)
DIATOMACEOUS EARTH, FLUX CALCINED	> 2000 mg/kg (rat)	--	--
LIMESTONE (CALCIUM CARBONATE)	> 5000 mg/kg (rat)	--	--

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
LD50 (intraperitoneal) > 31600 mg/kg (rat)

CRISTOBALITE (14464-46-1)
TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)

POLYETHYLENE (9002-88-4)
LDLo (oral) 3000 mg/kg (rat)

Skin Not classified as a skin irritant. Contact may result in mechanical irritation.

Eye Not classified as an eye irritant. Contact may result in mechanical irritation.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity Not classified as a carcinogen. Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.

Reproductive No relevant or reliable studies were identified.

STOT - single No known effects from this product.

exposure

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. Adverse health effects associated with silica, such as the development of silicosis (lung fibrosis), is not anticipated unless prolonged and repeated exposure to respirable silica quartz dust occurs.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

12.2 Persistence and degradability

Not applicable.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate.

12.4 Mobility in soil

This product has low mobility in soil.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **THINPOL**

Synonyms DISPEX-N400 ● THIN POL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
2-PROPENOIC ACID, HOMOPOLYMER	9003-01-4	618-347-7	30 to 60%
WATER	7732-18-5	231-791-2	<100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters
No fire or explosion hazard exists.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Not required under normal conditions of use.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS TO YELLOW LIQUID
Odour	SLIGHT AMMONIACAL ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 100°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	1.185 to 1.205
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects

are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
2-PROPENOIC ACID, HOMOPOLYMER	1,500 mg/kg (rat)	> 2,000 mg/kg (rabbit)	> 5.1 mg/l/4hrs (rat)

Additional ingredient toxicity values:

2-PROPENOIC ACID, HOMOPOLYMER (9003-01-4)
LD50 (intraperitoneal) 39 mg/kg (mouse)
LD50 (intravenous) 70 mg/kg (mouse)

Skin Not classified as a skin irritant. Contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2 mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg]

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required). Ensure that appropriate personal protective equipment is used during disposal.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

SAFETY DATA SHEET

TRIETHANOLAMINE

Issue Date 08-Aug-2022 **Revision date** 08-Aug-2022 **Version** 1
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name TRIETHANOLAMINE

Product Code NDF00931

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use No information available

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4 - (H302)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)

Label elements

Exclamation mark
Health hazard

Corrosion



Signal word
Danger

Hazard statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Precautionary Statements - Storage
Store locked up
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification
Toxic to aquatic life with long lasting effects
Toxic to aquatic life
General Hazards
No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Not applicable

Mixture

Chemical name	CAS No	Weight-%	REACH registration number
Triethanolamine	102-71-6	>60	01-2119486482-31-xxxx
Diethanolamine	111-42-2	10-30	01-2119488930-28-XXXX

Section 4: FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical. Foam. Carbon dioxide (CO2).

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Australia
Triethanolamine 102-71-6	5 mg/m^3
Diethanolamine 111-42-2	3 ppm 13 mg/m^3

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Hand protection Wear suitable gloves. Impervious gloves.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	liquid	**Odor**	Mild. ammonia like.
Color	No information available	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	10.5	1% solution
Melting point / freezing point	12 °C	No information available
Boiling point / boiling range	335 °C	
Flash point	190 °C	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure	< 1 kPa @ 20°C	No data available
Vapor density	4.80 (Air = 1)	No data available
Relative density	1.123	No information available
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		
Dynamic viscosity	450 mPa s @ 25 °C	

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known based on information supplied.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes. (based on components).

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

Ingestion Specific test data for the substance or mixture is not available Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea Harmful if swallowed (based on components)

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1,303.70 mg/kg
ATEmix (dermal) 16,587.60 mg/kg

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Triethanolamine	= 4190 mg/kg (Rat)	> 20000 mg/kg (Rabbit)	-
Diethanolamine	= 780 mg/kg (Rat)	= 11.9 mL/kg (Rabbit)	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available. None known.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis).

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Triethanolamine	EC50: =169mg/L (96h, Desmodesmus subspicatus) EC50: =216mg/L (72h, Desmodesmus subspicatus)	LC50: 10600 - 13000mg/L (96h, Pimephales promelas) LC50: 450 - 1000mg/L (96h, Lepomis macrochirus) LC50: >1000mg/L (96h, Pimephales promelas)	-	-
Diethanolamine	EC50: 2.1 - 2.3mg/L (96h, Pseudokirchneriella subcapitata) EC50: =7.8mg/L (72h, Desmodesmus subspicatus)	LC50: 1200 - 1580mg/L (96h, Pimephales promelas) LC50: 4460 - 4980mg/L (96h, Pimephales promelas) LC50: 600 - 1000mg/L (96h, Lepomis macrochirus)	EC50 = 73 mg/L 5 min EC50 > 16 mg/L 16 h	EC50: =55mg/L (48h, Daphnia magna)

Persistence and degradability

Persistence and degradability No information available.

Component Information			
Diethanolamine (111-42-2)			
Method	Exposure time	Value	Results
OECD Test No. 301F: Ready Biodegradability: Manometric	28 days	93%	Readily biodegradable

Respirometry Test (TG 301 F)			

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Triethanolamine	-2.53
Diethanolamine	-2.46

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories
TSCA Complies

DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 08-Aug-2022

Revision date 08-Aug-2022

Revision Note
No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

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End of Safety Data Sheet

SAFETY DATA SHEET

TrueScav™ HD

Issue Date 29-Aug-2018 **Revision date** 02-Nov-2023 **Version** 1.1
EN

Section 1: IDENTIFICATION: PRODUCT INDENTIFIER AND CHEMICAL IDENTITY

0

Product identifier

Product Name TrueScav™ HD

Product Code NDF00394

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use oxygen scavenger

Uses advised against No information available

Details of manufacturer or importer

Supplier
Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand); 1-800-424-9300 (International Number);

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Dermal	Category 4 - (H312)

Label elements

Exclamation mark



Signal word
Warning

Hazard statements
H312 - Harmful in contact with skin

Precautionary Statements - Prevention
Wear protective gloves/protective clothing/eye protection/face protection
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification
May be harmful if swallowed
General Hazards
No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8

Substance

Chemical name	CAS No	Weight-%	REACH registration number
Sodium Erythorbate	6381-77-7	100	No data available

Section 4: FIRST AID MEASURES

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Emergency telephone number Poisons Information Center, Australia: 13 11 26
Poisons Information Center, New Zealand: 0800 764 766

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides. Sodium oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible materials Strong oxidizing agents

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Hand protection Wear suitable gloves.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid		
Appearance	Powder	**Odor**	No information available.
Color	White	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	5 - 8	
Melting point / freezing point	160 °C	
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.2-1.7	
Water solubility	Soluble in water	

Solubility(ies)	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Hyphen	No information available
Kinematic viscosity	Not applicable
Dynamic viscosity	Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact May be absorbed through the skin in harmful amounts. Harmful in contact with skin. (based on components).

Ingestion May be harmful if swallowed

Symptoms No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 5,000.00 mg/kg
ATEmix (dermal) 2,000.00 mg/kg

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity
0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Erythorbate	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies

PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 29-Aug-2018

Revision date 02-Nov-2023

Revision Note
No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

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End of Safety Data Sheet

NEWPARK DRILLING FLUIDS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ZINC OXIDE**

Synonyms ZINC WHITE

1.2 Uses and uses advised against

Uses SCAVENGER

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website http://www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Aquatic Toxicity (Chronic): Category 1

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H410 Very toxic to aquatic life with long lasting effects.

Prevention statements

P273 Avoid release to the environment.

Response statements

P391 Collect spillage.

Storage statements

None allocated.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ZINC OXIDE	1314-13-2	215-222-5	>99%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve zinc oxides when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

5.4 Hazchem code

2Z

2 Fine Water Spray.

Z Wear full fire kit and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Zinc oxide (dust)	SWA [AUS]	--	10	--	--
Zinc oxide (fume & dust)	SWA [Proposed]	--	2	--	10
Zinc oxide (fume)	SWA [AUS]	--	5	--	10

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE TO YELLOW-WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	1975°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	NOT AVAILABLE
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with metals if heated and with acids (e.g. nitric acid).

10.6 Hazardous decomposition products
May evolve zinc oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low toxicity. Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ZINC OXIDE	7950 mg/kg (mouse)	--	2500 mg/m³ (mouse)

Additional ingredient toxicity values:

ZINC OXIDE (1314-13-2)

LD50 (intraperitoneal)	240 mg/kg (rat)
LDLo (oral)	500 mg/kg (human)
TCLo (inhalation)	600 mg/m³ (human)

Skin Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure. Inhalation of freshly formed zinc oxide fumes may result in the development of a flu-like illness termed metal fume fever.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability
This product is not readily biodegradable.

12.3 Bioaccumulative potential
All living organisms have homeostasis mechanisms that actively regulate zinc uptake and absorption/excretion from the body; due to this regulation, zinc and zinc compounds do not bioaccumulate or biomagnify.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE





	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	3077	3077	3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
14.3 Transport hazard class	9	9	9
14.4 Packing Group	III	III	III

14.5 Environmental hazards
Marine Pollutant.

14.6 Special precautions for user
Hazchem code 2Z

GTEPG 9C1

EmS F-A, S-F

Other information The environmentally hazardous substance mark is not required when transported in packages of less than 5 kg/L (UN Model Regulations: Special Provision 375; IATA: Special Provision A197; IMDG: Special Provision 969) or less than 500 kg/L by Australian Road and Rail.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[End of SDS]

Table A System Details

Operator	BURU ENERGY
Project/Well	Well Drilling and Workover Campaign
System	Drilling Fluid, & Completion Brine
Total Volume of System	*3,500 m^3

**Includes 100% contingency*

Table B Product List

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
Water	N/A	Base Fluid		72.614%	N
Barite / API Barite / MIL-BAR	BAKER HUGHES	Weighting Agent	**CONSTITUENT 1 – (60-100%)** **Toxicology Data:** Exposure limit: TWA: 10 mg/m^3 8 hours. **CONSTITUENT 2 - (1-5%)** **Toxicology Data:** LD50 Oral, >5000 mg/kg, Rat Exposure limit: TWA: 0.1 mg/m^3 8 hours. Form: Respirable dust **CONSTITUENT 3 - (1-5%)**	8.12%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Toxicology Data: Exposure limit: TWA: 2.5 mg/m³ 8 hours. Form: Inspirable Carcinogenicity: Category 1. No known sensitisation, mutagenic or reproductive toxicity effects. **Ecotoxicity Data:** No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Barite is a naturally occurring salt (Barium Sulphate). The product is an inert and nonreactive salt, non-Toxic and no mobility in soil. Barium sulphate (major ingredient of barite ~60-100%) is insoluble in water and not biodegradable. The product is not known to be bioaccumulate.		
Caustic Soda	BAKER HUGHES	pH control-prevents bacteria & corrosion.	**CONSTITUENT 1 – (100%)** **Toxicology Data:** Exposure limit: TWA: 2 mg/m³ 8 hours. Causes pain and burns in contact with skin. May cause permanent skin damage. Risk of serious damage to eyes. May cause eye burns and permanent eye injury. Causes serious eye damage. Causes severe burns. Corrosive to the digestive tract. Causes burns. pain or irritation, redness, blistering may occur **Ecotoxicity Data:** Acute EC50 40.38 mg/l Fresh water Crustaceans – Ceriodaphnia dubia – Neonate, 48 hours Acute LC50 80.59 ppm Marine water Crustaceans - Mysidopsis juniae. 96 hours Acute LC50 125 ppm Fresh water Fish - Gambusia affinis – Adult, 96 hours Chronic LOEL 125 ppm Marine water, Echinodermata – Lytechinus variegatus, Chronic NOEC 62.5 ppm Marine water, Echinodermata – Lytechinus variegatus **Biodegradation/bioaccumulation:** Does not bioaccumulate. Caustic Soda is inorganic compound (NaOH), which is neutralized in nature into salt and water. Being inorganic product, biodegradation is not a concern.	0.05%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
CHEK-LOSS	BAKER HUGHES	LCM	**CONSTITUENT 1 – (100%)** **Toxicology Data:** LD50 Oral, >5 g/kg, Rat **Ecotoxicity Data:** No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Not available	0.70%	Y
MAX-GUARD E A	BAKER HUGHES	Shale Stabilizer	**CONSTITUENT 1 – (≥10 - ≤30 %)** **CONSTITUENT 2 – (≥10 - ≤30 %)** **Toxicology Data:** LC50 Inhalation Gas. 5620 ppm 1 hours, Mouse LD50 Oral, 4960 mg/kg, Mouse LD50 Oral, 3310 mg/kg, Rat **Ecotoxicity Data:** Acute EC50 300.82 mg/l Marine water , Algae, 72 hours Acute EC50 73400 µg/l Fresh water, Algae - Navicula seminulum, 96 hours Acute EC50 300.82 mg/l Fresh water, Daphnia, 48 hours Acute LC50 117.6 ul/L Marine water, Crustaceans - Artemia sp, 48 hours Acute LC50 300.82 mg/l Marine water, Fish, 96 hours Acute LC50 79000 µg/l Fresh water, Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling), 96 hours **Biodegradation/bioaccumulation:** Not available / Log Pow -17, BCF 3.16 , Potential is low	1.62%	Y
MIL-BIO SEA 98	BAKER HUGHES	Biocide	**Toxicology Data:** LC50 Inhalation Dusts and mists , 0.591 mg/l @ 75% THPS (Aqueous solution), 4 hours	0.05%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LD50 Dermal, >2000 mg/kg (75% solution), Rat LD50 Oral, 575 mg/kg (75% solution), Rat **Ecotoxicity Data:** Toxic to aquatic organisms. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Acute EC50 0.66 mg/l, Algae, 96 hours Acute EC50 15.1 mg/l, Daphnia, 48 hours Acute LC50 95 mg/l, Fish, 96 hours Chronic NOEC 0.064 mg/l, Algae, 96 hours Chronic NOEC 0.032 mg/l, Daphnia, 21 days Chronic NOEC 1.1 mg/l, Fish, 32 days **Biodegradation/bioaccumulation:** Not available .		
MIL-PAC LV	BAKER HUGHES	Filtration Control	**Toxicology Data:** LD50 Oral, 27000 mg/kg, Rat **Ecotoxicity Data:** Acute EC50 87.26 mg/l Fresh water Crustaceans – Ceriodaphnia dubia – Neonate 48 hours Acute LC50 >20000000 µg/l Fresh water Fish - Oncorhynchus mykiss 96 hours **Biodegradation/bioaccumulation:** Not available .	0.58%	Y
Potassium Chloride (KCl)	BAKER HUGHES	Shale Stabilizer	**Toxicology Data:** LD50 Oral Rat 2600 mg/kg **Ecotoxicity Data:**	5.34%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			No known significant effects or critical hazards. Acute LC50 824.63 ppm Marine water Crustaceans - Mysidopsis juniae 96 hours Chronic LOEL 625 ppm Marine water Echinodermata – Lytechinus variegatus Chronic NOEC 312 ppm Marine water Echinodermata – Lytechinus variegatus **Biodegradation/bioaccumulation:** Not available.		
NEW-DRILL PLUS	BAKER HUGHES	Deflocculant	**Toxicology Data:** No known significant effects or critical hazards. **Ecotoxicity Data:** No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Log Pow -2, BCF -, Potential is low	0.12%	Y
Salt / Sodium Chloride / Industrial Salt	BAKER HUGHES	Weighting Agent	**Toxicology Data:** LD50 Oral Rat 3000 mg/kg Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. **Ecotoxicity Data:** No known significant effects or critical hazards. Acute EC50 2430000 µg/l Fresh water Algae - Navicula seminulum 96 hours Acute EC50 519.6 mg/l Fresh water Crustaceans – Cypris subglobosa 48 hours Acute EC50 402600 µg/l Fresh water Daphnia - Daphnia magna 48 hours Acute IC50 6.87 g/L Fresh water Aquatic plants - Lemna minor 96 hours Acute LC50 1294600 µg/l Fresh water Fish - Lepomis macrochirus 96 hours Acute LC50 1000000 µg/l Fresh water Fish - Morone saxatilis - Larvae 96 hours Chronic NOEC 6 g/L Fresh water Aquatic plants - Lemna minor 96 hours Chronic NOEC 0.314 g/L Fresh water Daphnia - Daphnia pulex 21 days	4.64%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Chronic NOEC 100 mg/l Fresh water Fish - Gambusia holbrooki – Adult 8 weeks Chronic NOEC 643000 µg/l Fresh water Fish - Oncorhynchus mykiss – Egg 56 days **Biodegradation/bioaccumulation:** Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.		
Sized Calcium Carbonate (Omyacarb 5/10/20/40 / Circal 60/16 & 1000, etc.)	BAKER HUGHES	Bridging & Weighting Agent	**CONSTITUENT 1 – (99 %)** **CONSTITUENT 2 – (<1 %)** **CONSTITUENT 3 – (<1 %)** **Toxicology Data:** ASCC TWA for CaCO3 Inhalable Dust in Australia is: 3 mg/m3 ACGIH TLV for CaCO3 Respirable Dust in Australia is: 10 mg/m3 ASCC TWA for Respirable Quartz in Australia is: 0.1 mg/m3 LD 50 oral, rat = > 5000 mg/kg Inhalation of dust may cause discomfort in the upper respiratory tract. Prolonged and repeated inhalation of excessive dust may permanently affect the respiratory system. Prolonged and repeated exposure may cause skin dehydration and irritation skin conditions **Ecotoxicity Data:** In its solid state, calcium carbonate is a natural mineral of the earth. In its dissolved state, the substance is a natural and indispensable component of natural waters. LC50 Fish 96 h > 10'000 mg/l LC50 Daphnia 49 h > 1000 mg/l LC50 Algae 72 h > 200 mg/l	4.64%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Biodegradation/bioaccumulation: Not readily degradable, except in acid conditions where it tends to have a neutralizing effect. Calcium carbonate is a naturally occurring inorganic compound which has constituent elements that make up natural components of biological organisms. Calcium carbonate is practically insoluble except in acid conditions, and so presents a low soil mobility in most ground. Moreover, it is commonly used as an effective soil conditioner and fertilizer.		
Soda Ash	BAKER HUGHES	pH / Hardness control	**Toxicology Data:** Risk of serious damage to eyes. May cause eye burns and permanent eye injury. May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath. Causes serious eye damage. **Ecotoxicity Data:** No known significant effects or critical hazards. Acute EC50 242000 µg/l Fresh water Algae - Navicula seminulum 96 hours Acute LC50 176000 µg/l Fresh water Crustaceans - Amphipoda 48 hours Acute LC50 265000 µg/l Fresh water Daphnia - Daphnia magna 48 hours Acute LC50 300000 µg/l Fresh water Fish - Lepomis macrochirus 96 hours **Biodegradation/bioaccumulation:** Not Available	0.05%	Y
XAN-PLEX™ D	BAKER HUGHES	Viscosifier	**Toxicology Data:** This product is expected to be of low toxicity. LD50 (oral) > 1000 mg/kg (mouse) LD50 (oral) > 45,000 mg/kg (rat) LD50 (oral) > 20,000 mg/kg (dog)	0.23%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LD50 (intraperitoneal): > 50 mg/kg (mouse) LD50 (intravenous): 100-250 mg/kg (mouse **Ecotoxicity Data:** No known significant effects or critical hazards. Acute LC50 179.15 ppm Marine water Crustaceans - Mysidopsis juniae 96 hours Chronic LOEL 250 ppm Marine water Echinodermata – Lytechinus variegatus Chronic NOEC 125 ppm Marine water Echinodermata – Lytechinus variegatus **Biodegradation/bioaccumulation:** Not expected to bioaccumulate		
OVA COL 110 LC	OVACHEM	Shale Stabilizer	**Toxicology Data:** No data available. No component of this product present at levels greater than or equal to 0. 1%is identified as probable, possible or confirmed human carcinogen by IARC. May be harmful if inhaled. May cause respiratory tract irritation May be harmful if absorbed through skin. May cause skin irritation. May be harmful if swallowed Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation, Conjunctivitis., Stomach/intestinal disorders **Ecotoxicity Data:** Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50 (Lepomis macrochirus (Bluegill sunfish)): 10,650 mg/l Exposure time: 96.0 h LC50 (Gambusia affinis (Mosquito fish)): 13,400 mg/l Exposure time: 96.0 h **Biodegradation/bioaccumulation:**	1. 62%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Bio degradable / This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB)		

Contingency Chemicals

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
Bentonite / API Bentonite/ MIL-GEL	BAKER HUGHES	Viscosifier	**CONSTITUENT 1 – (60-100%)** **Toxicology Data:** LD50 (intravenous) = 35 mg/kg (rat), LD50 (oral): > 2000mg/kg (rat), LDLo (intravenous) = 10 mg/kg (dog), Inhalation LC 50: > 5.27 mg/L, 4hr (rat) **CONSTITUENT 2 – (5-10%)** **Toxicology Data:** LD50 Oral, >5000 mg/kg, Rat Exposure limit: TWA: 0.1 mg/m³ 8 hours. Form: Respirable dust Carcinogenicity: Category 1. No known sensitisation, mutagenic or reproductive toxicity effects. **Ecotoxicity Data:** Acute LC50 19000000 µg/l Fresh water Fish - Oncorhynchus mykiss, 96 hours **Biodegradation/bioaccumulation:** Will not bioaccumulate. The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.	5.05%	Y
MONOETHANOLAMINE	IXOM	Corrosion Inhibitor	**CONSTITUENT 1 – (100%)** **Toxicology Data:** Oral LD50 (rat): 1089-1720 mg/kg Dermal LD50: 1000 mg/kg (rabbit) Inhalation LC50: >1.3 mg/L (rat (6h) Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract. A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury. Corrosive to skin. Breathing in vapour will produce respiratory irritation.	0.05%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Ecotoxicity Data: Avoid contaminating waterways. Algae/aquatic plants: EC50: 15 mg/L (72h, Desmodesmus subspicatus) Fish: LC50: 227 mg/L (96h, Pimephale promelas). LC50: 3684 mg/L (96h, Brachydanio rerio). LC50: 300 - 1000 mg/L (96h, Lepomis macrochirus). LC50: 114 - 196 mg/L (96h, Oncorhynchus mykiss). LC50: > 200 mg/L (96h, Oncorhynchus mykiss). Crustacea: EC50: 65 mg/L (48h, Daphnia magna) **Biodegradation/bioaccumulation:** The material is readily biodegradable./ Low log P value suggests little potential for bioaccumulation.		
BRINE-PAC 1500	BAKER HUGHES	Corrosion Inhibitor	**CONSTITUENT 1 – (≥10 – <25%)** **Toxicology Data:** LD50 Dermal, 805 mg/kg, Rabbit LD50 Oral, 2500 mg/kg, Rat Exposure limit: DFG MAC-values list (Germany, 7/2023). Skin sensitiser. **Ecotoxicity Data:** Acute EC50 3700 µg/l Fresh water, Algae – Pseudokirchneriella subcapitata, 96 hours Acute LC50 33900 µg/l Fresh water, Daphnia - Daphnia magna, 48 hours Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. **Biodegradation/bioaccumulation:** -1.66 to -1.4, BCF "-", Potential is low	0.05%	Y
OVA TRICIDE 70	BAKER HUGHES	Biocide	**CONSTITUENT 1 – (80%)** **Toxicology Data:** Harmful if inhaled. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness. LD50 (oral,rat) = 2,900 mg/kg	0.05%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			LD50 (dermal, rabbit) = 1,840 mg/kg Low toxicity if swallowed. Causes serious eye damage. **Ecotoxicity Data:** Poecilia reticulata: LC50 (96 h) > 100 mg/l Longterm for fish: NOEC > 100 mg/l Acute for invertebrates: Daphnia magna: EC50 (48 h) = 62.6 mg/l Longterm for invertebrates: no data available Effective concentration for algae: EC50 (72 h) > 77.7 mg/l Algae: ErC10 (72 h) = 0.4 mg/l **Biodegradation/bioaccumulation:** Biodegradable. / BCF < 50 **CONSTITUENT 2 – (20%)** **Toxicology Data:** No known significant effects or critical hazards **Ecotoxicity Data:** No known significant effects or critical hazards **Biodegradation/bioaccumulation:** -		
Calcium Chloride	BAKER HUGHES	Weighting Agent / Salt	**CONSTITUENT 1 – (100%)** **Toxicology Data:** No known significant effects or critical hazards. **Ecotoxicity Data:** Acute EC50 3130000 µg/l Fresh water, Algae - Navicula seminulum, 96 hours	0.06%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Acute EC50 464000 µg/l Fresh water, Daphnia - Daphnia magna, 48 hours Acute LC50 270 mg/l Marine water, Crustaceans – Americamysis bahia, 48 hours Acute LC50 2110 mg/l Fresh water, Fish - Pimephales promelas, 96 hours No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.		
Citric Acid	BAKER HUGHES	Alkalinity Control	**CONSTITUENT 1 – (100%)** **Toxicology Data:** LD50 Oral, 3 g/kg, Rat **Ecotoxicity Data:** Acute LC50 160000 µg/l Marine water, Crustaceans - Carcinus maenas - 48 hours Acute LC50 71 ppm Marine water, Crustaceans - Mysidopsis juniae, 96 hours Chronic NOEC 7.81 ppm Marine water, Echinodermata – Lytechinus variegatus, Chronic NOEL 15.62 ppm Marine water, Echinodermata – Lytechinus variegatus **Biodegradation/bioaccumulation:** This product does not bioaccumulate	0.13%	Y
DESCO CF	BAKER HUGHES	Dispersant	**CONSTITUENT 1 – (≥75 - ≤90 %)** **Toxicology Data:** Not Available **CONSTITUENT 2 – (<1%)** **Toxicology Data:**	0.13%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			crystalline silica, respirable powder, Inhalation, lungs Carcinogenicity: Category 1. No known sensitisation, mutagenic or reproductive toxicity effects. **Ecotoxicity Data:** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. **Biodegradation/bioaccumulation:** Not available		
Driscal® D	Drilling Specialties Company LLC	HT Filtration	**Toxicology Data:** The product contains no substances classified as hazardous to health in concentrations which should be taken into account. **Ecotoxicity Data:** Toxicity to fish: LC50: > 1,800 mg/l Exposure time: 96 h Species: Scophthalmus maximus (Flatfish, Flounder) static test Method: PARCOM Protocol Part B Toxicity to daphnia and other aquatic invertebrates: LC50: 599 mg/l Exposure time: 48 h Species: Acartia tonsa (Marine Copepod) static test Method: ISO TC147/SC5/WG2 Toxicity to algae: EC50: 2,693 mg/l Exposure time: 72 h Species: Skeletonema costatum (marine diatom) static test Method: ISO 10253 This material is not expected to be harmful to aquatic organisms. **Biodegradation/bioaccumulation:** This material is not expected to be readily biodegradable./ Accumulation in aquatic organisms is unlikely. The polymer is too large to be bioavailable.	0.38%	Y
KWIK-SEAL F/M/C	BAKER HUGHES	LCM	**Toxicology Data:** LD50 Oral, >5 g/kg, Rat	0.1%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Ecotoxicity Data: No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Not Available		
LC LUBE	BAKER HUGHES	Solid lubricant. / Lost Circulation Material	**Toxicology Data:** Exposure limit: TWA: 3 mg/m³ 8 hours. Form: Respirable dust Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. **Ecotoxicity Data:** No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Not Available	0.1%	Y
Magnesium Oxide	BAKER HUGHES	pH Control	**Toxicology Data:** Exposure limit: TWA: 10 mg/m³ 8 hours. Form: Fume **Ecotoxicity Data:** Acute LC50 180.91 ppm Marine water, Crustaceans - Mysidopsis juniae, 96 hours Chronic LOEL 250 ppm Marine water, Echinodermata – Lytechinus variegatus Chronic NOEC 125 ppm Marine water, Echinodermata – Lytechinus variegatus **Biodegradation/bioaccumulation:** Not expected to bioaccumulate.	0.76%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
MAX-GUARD PLUS A	BAKER HUGHES	Shale Stabilizer	**CONSTITUENT 1 – (≥10 - ≤30 %)** **Toxicology Data:** Exposure Limit: TWA: 4.2 mg/m³ 8 hours. TWA: 1 ppm 8 hours. LD50 Dermal, 1090 mg/kg, Rabbit **CONSTITUENT 2 – (≥10 - ≤30 %)** **Toxicology Data:** Exposure Limit: STEL: 37 mg/m³ 15 minutes. STEL: 15 ppm 15 minutes. TWA: 25 mg/m³ 8 hours. TWA: 10 ppm 8 hours. LD50 Oral, 1080 mg/kg, Rat LD50 Dermal, 1060 mg/kg, Rabbit LD50 Dermal, 1060 uL/kg, Rabbit LD50 Oral, 4960 mg/kg, Mouse LD50 Oral, 3310 mg/kg, Rat Causes pain and burns in contact with skin. May cause permanent skin damage. Risk of serious damage to eyes. May cause eye burns and permanent eye injury. **Ecotoxicity Data:** No known significant effects or critical hazards. Acute EC50 345600 µg/l Fresh water, Algae – Pseudokirchneriella subcapitata, 96 hours Acute LC50 53500 µg/l Fresh water, Daphnia - Daphnia magna, 48 hours Acute LC50 1014000 µg/l Fresh water, Fish - Poecilia reticulata, 96 hours NOEC 1150 mg/l, Micro-organism, 16 hours Acute EC50 >1000 mg/l, Algae, 72 hours	1.62%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Acute EC50 73400 µg/l Fresh water, Algae - Navicula seminulum, 96 hours Acute EC50 >1000 mg/l Fresh water, Daphnia, 48 hours Acute EC50 65000 µg/l Fresh water, Daphnia - Daphnia magna – Neonate,48 hours Acute LC50 50.1 ul/L Marine water, Crustaceans - Artemia sp., 48 hours Acute LC50 >1000 mg/l, Fish, 96 hours Acute LC50 251 ppm Fresh water, Fish - Gambusia affinis – Adult, 96 hours Acute LC50 75000 µg/l Fresh water, Fish - Lepomis macrochirus, 96 hours Acute LC50 88000 µg/l Fresh water, Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling), 96 hours **Biodegradation/bioaccumulation:** Constitute 1 :Not available / Log Pow -5.58, BCF 2.8 – 6.3, Potential is low Constitute 2 :Not available / Log Pow -0.17, BCF 3.16, Potential is low		
MIL-LIME	BAKER HUGHES	Alkalinity Control	**Toxicology Data:** Exposure limit TWA: 5 mg/m³ 8 hours. Causes serious eye damage. May cause respiratory irritation. Causes skin irritation. **Ecotoxicity Data:** Acute LC50 112.89 ppm Marine water Crustaceans - Mysidopsis juniae 96 hours Acute LC50 160 ppm Fresh water Fish - Gambusia affinis - Adult 96 hours Acute LC50 457 mg/l Marine water Fish - Gasterosteus aculeatus 96 hours Chronic LOEL 125 ppm Marine water Echinodermata – Lytechinus variegatus Chronic NOEC 62.5 ppm Marine water Echinodermata – Lytechinus variegatus	0.08%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Biodegradation/bioaccumulation: Not available .		
MILSTARCH	BAKER HUGHES	Filtration Control	**Toxicology Data:** No known significant effects or critical hazards. **Ecotoxicity Data:** No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Not available .	1.01%	Y
NOXYGEN™ L	BAKER HUGHES	Oxygen scavenger	**Toxicology Data:** May be harmful if ingested. Can cause target organ damage. Adverse symptoms may include the following:,pain,watering,redness Adverse symptoms may include the following:,stomach pains **Ecotoxicity Data:** No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Not available.	0.08%	Y
SAPP	BAKER HUGHES	Dispersant	**Toxicology Data:** Causes serious eye irritation. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.	0.13%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Ecotoxicity Data: No known significant effects or critical hazards. **Biodegradation/bioaccumulation:** Not Available		
Sodium bicarbonate	BAKER HUGHES	Alkalinity / Hardness Control	**Toxicology Data:** LD50 Oral Rat 4220 mg/kg Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. **Ecotoxicity Data:** No known significant effects or critical hazards. Acute EC50 650000 µg/l Fresh water Algae - Navicula seminulum 96 hours Acute LC50 767.87 mg/l Marine water Crustaceans – Americamysis bahia 48 hours Acute LC50 1649.38 ppm Marine water Crustaceans - Mysidopsis juniae 96 hours Acute LC50 7550 ppm Fresh water Fish - Gambusia affinis - Adult 96 hours Chronic LOEL 1250 ppm Marine water Echinodermata – Lytechinus variegatus Chronic NOEC 576 mg/l Fresh water Daphnia - Daphnia magna – Neonate 3 weeks	0.13%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Chronic NOEC 625 ppm Marine water Echinodermata – Lytechinus variegatus **Biodegradation/bioaccumulation:** Not Available		
SODIUM ERYTHORBATE	REDOX	Oxygen Scavenger	**Toxicology Data:** Exposure limit 8 hr TWA = 10 mg/m3 (measured as inhalable dust). Ingestion: No adverse effects expected; however, large amounts may cause nausea and vomiting. Eye contact: Mild irritant (Rabbit). Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes. Skin contact: Contact with skin may result in irritation. Inhalation: Material may be irritant to the mucous membranes of the respiratory tract. Acute toxicity (Oral): LD50, Rats: 15.3 g/kg **Ecotoxicity Data:** No information available. **Biodegradation/bioaccumulation:** The material is biodegradable. No information available about bioaccumulation.	0.13%	Y
TEA (Triethanolamine)	BAKER HUGHES	Polymer Temperature resistance Stabilizer	**Toxicology Data:** LD50 Oral Rat 7.39 g/kg **Ecotoxicity Data:** No known significant effects or critical hazards.	1.01%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Acute LC50 100000 µg/l Marine water Crustaceans - Crangon crangon – Adult 48 hours Acute LC50 11800000 µg/l Fresh water Fish - Pimephales promelas 96 hours Chronic NOEC 16000 µg/l Fresh water Daphnia - Daphnia magna 21 days **Biodegradation/bioaccumulation:** Log Pow -1, BCF < 3.9, Potential is low		
W.O.™ DEFOAM	BAKER HUGHES	Defoamer	**Toxicology Data:** Exposure limit is TWA: 5 ppm 8 hours. LD50 Dermal Rat >3000 mg/kg LD50 Oral Rat 3290 mg/kg May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath. **Ecotoxicity Data:** No known significant effects or critical hazards. Acute LC50 75 mg/dm3 Fresh water Fish - *Oncorhynchus mykiss* – Fry 96 hours Acute LC50 28200 µg/l Fresh water Fish - *Pimephales promelas* 96 hours **Biodegradation/bioaccumulation:** Log Pow 2.9, BCF 25.33, Potential is low	0.03%	Y
OVA LUBE PLUS	OVACHEM	Lubricant	**CONSTITUENT 1 – (80-90 %)** **CONSTITUENT 2 – (10-20 %)** **Toxicology Data:**	1.77%	Y

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			The product is not thought to produce adverse health effects. **Ecotoxicity Data:** Not available. **Biodegradation/bioaccumulation:** Not Available		
OVA LUBE B	OVACHEM	Lubricant	**CONSTITUENT 1 – (70-90 %)** **Toxicology Data:** Acute oral toxicity : LD50 (Rat): > 5,000 mg/k Rabbit Acute inhalation toxicity : LC50 (Rat): > 5.28 mg/l Test atmosphere: vapour, Rabbit Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg, Rabbit **CONSTITUENT 2 – (10-30 %)** **Toxicology Data:** Not available **Ecotoxicity Data:** Toxicity to fish : LL50 (Cyprinodon variegatus (sheepshead minnow)): > 1,000 mg/l Exposure time: 96 h Toxicity to daphnia and other aquatic invertebrates EC50 (Acartia tonsa (Copepod)): > 1,000 mg/l Exposure time: 48 h Toxicity to algae : ErC50 (Skeletonema costatum (marine diatom)): > 1,000 mg/l Exposure time: 72 h **Biodegradation/bioaccumulation:** No available data.	1.77%	Y

Baker Hughes

Table C Main Chemicals Ingredients

Main Chemicals Name	CAS number	Mass fraction (%)
WATER	7732-18-5	72.548%
BARITE	13462-86-7	7.5184%
POTASSIUM CHLORIDE	7447-40-7	5.3165%
SODIUM CHLORIDE	7647-14-5	4.6196%
CALCIUM CARBONATE	471-34-1	4.5272%
POLYETHYLENE GLYCOL MONOBUTYL ETHER	9004-77-7	1.5951%
ACETIC ACID	64-19-7	1.2278%
CELLULOSE	9004-34-6	0.69692%
SODIUM CARBOXYMETHYL CELLULOSE	9004-32-4	0.57745%
CRYSTALLINE SILICA: QUARTZ (SIO2)	14808-60-7	0.49660%
POLY[OXY(METHYL-1,2-ETHANEDIYL)], α-(2-AMINOMETHYLETHYL)-ω-(2-AMINOMETHYLETHOXY)-	9046-10-0	0.25403%
XANTHAN GUM	11138-66-2	0.22899%
MICA	12001-26-2	0.16169%
2-PROPENOIC ACID, POLYMER WITH 2-PROPENAMIDE, SODIUM SALT	25987-30-8	0.11947%
SODIUM HYDROXIDE	1310-73-2	0.04978%
SODIUM CARBONATE	497-19-8	0.04978%
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE	55566-30-8	0.01232%
TOTAL		**100.00%**

Table D Contingency Chemicals Ingredients

Contingency Chemicals Name	CAS number	Mass fraction (%)
Mud		100%
BENTONITE	1302-78-9	5.2284%
SULPHONATED CASTOR OIL	8002-33-3	1.3746%
TRIETHANOLAMINE	102-71-6	1.2438%
POLYALKYLENE GLYCOL	9003-13-8	1.1307%
STARCH	9005-25-8	1.1007%
MAGNESIUM OXIDE	1309-48-4	0.82826%
GLYCEROL	56-81-5	0.67900%
LECITHIN	8002-43-5	0.47696%
SODIUM CARBOXYMETHYL CELLULOSE	9004-32-4	0.41413%
DIETHYLENETRIAMINE	111-40-0	0.38841%
ACETIC ACID	64-19-7	0.38841%
SODIUM BICARBONATE	144-55-8	0.28335%
CRYSTALLINE SILICA: QUARTZ (SIO2)	14808-60-7	0.27645%
SODIUM ERYTHORBATE	6381-77-7	0.14168%
SODIUM ACID PYROPHOSPHATE	7758-16-9	0.14168%
CITRIC ACID	77-92-9	0.14168%
SULFOMETHYLATED TANNINS	68201-64-9	0.11320%
GRAPHITE	7782-42-5	0.10898%
CALCIUM HYDROXIDE	1305-62-0	0.08719%
CALCIUM CHLORIDE, ANHYDROUS	10043-52-4	0.06539%
CELLULOSE	9004-34-6	0.05994%
AMMONIUM BISULPHITE	10192-30-0	0.05929%
2-AMINOETHANOL	141-43-5	0.05558%
WALNUT SHELLS	84012-43-1	0.04904%

1,3,5-TRIAZINE	290-87-9	0.04387%
ETHYL HEXANOL	104-76-7	0.02717%
ETHANOL, 2,2'-OXYBIS	68909-77-3	0.01396%
FERROUS SULFATE MONOHYDRATE	17375-41-6	0.01261%
METHANOL	67-56-1	0.00559%

SAFETY DATA SHEET

Barite

Version 2

Section 1. Identification

Product identifier : Barite

Product code : 100316

ADG : -

Product type : Powder.

Identified uses : Cement additive

Supplier's details : Baker Hughes, Australia
108 Poole Street,
Welshpool,
Western Australia 6106,
Australia

Tel: +618 9350 3800
Fax: +618 9350 5453

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : CARCINOGENICITY - Category 1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

GHS label elements

Hazard pictograms :



GHS08

Signal word : DANGER

Section 2. Hazard(s) identification

Hazard statements : H350 - May cause cancer.
H373 - May cause damage to organs through prolonged or repeated exposure. (lungs)

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves: > 8 hours (breakthrough time): nitrile or neoprene. Wear protective clothing. Wear eye or face protection. Wear hearing protection. Do not breathe dust or mist.

Response : IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : , P201, P280, P260, P308 + P313, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
barium sulfate	60 - 100	7727-43-7
crystalline silica, respirable powder	1 - 5	14808-60-7
Mica-group minerals	1 - 5	12001-26-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : sulfur oxides,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
barium sulfate	**Safe Work Australia (Australia, 10/2022).** TWA: 10 mg/m³ 8 hours.
crystalline silica, respirable powder	**Safe Work Australia (Australia, 1/2014).** TWA: 0.1 mg/m³ 8 hours. Form: Respirable dust
Mica-group minerals	**Safe Work Australia (Australia, 10/2022).** TWA: 2.5 mg/m³ 8 hours. Form: Inspirable

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): nitrile or neoprene

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Wear a respirator conforming to EN140 with type A/P2 filter or better.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Tan. to Brown.

Odour : Odourless.

Odour threshold : Not available.

pH : 7 [Conc. (% w/w): 2% - (H2O)]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Non-flammable.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 4 to 4.5 (20°C)

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Heating with aluminum may cause explosions.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
crystalline silica, respirable powder	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	inhalation	lungs

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Section 11. Toxicological information

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Section 15. Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 26 February 2024.

Date of issue/Date of revision : 26 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
CARCINOGENICITY - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

Caustic Soda

Version 5

Section 1. Identification

Product identifier : Caustic Soda

Product code : 6062DF

ADG : SODIUM HYDROXIDE, SOLID

Product type : Solid.

Identified uses : pH control.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : CORROSIVE TO METALS - Category 1
SKIN CORROSION/IRRITATION - Category 1A
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

GHS label elements

Hazard pictograms :



GHS05

Signal word : DANGER

Section 2. Hazard(s) identification

Hazard statements : H290 - May be corrosive to metals.
H314 - Causes severe skin burns and eye damage.

Precautionary statements

Prevention : Wear protective gloves: > 8 hours (breakthrough time): Neoprene gloves.. Wear protective clothing. Wear eye or face protection: Recommended: Chemical splash goggles. and face shield. Keep only in original packaging.

Response : Absorb spillage to prevent material damage. IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : -, P280, P234, P390, P304 + P310, P301 + P310, P330, P331, P303 + P361 + P353, P310, P363, P305 + P351 + P338, P310, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : Causes digestive tract burns.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
sodium hydroxide; caustic soda	60 - 100	.1310-73-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Section 4. First aid measures

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Call a poison center or physician. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns.

Ingestion : Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Firefighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : 2W

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Absorb spillage to prevent material damage. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Absorb spillage to prevent material damage. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store in corrosive resistant container with a resistant inner liner. Store locked up. Keep away from metals. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
sodium hydroxide; caustic soda	**Safe Work Australia (Australia, 1/2014).** TWA: 2 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and particulate filter

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 14 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : 323°C

Boiling point, initial boiling point, and boiling range : 1388°C (2530.4°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.13 (20°C)

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Extremely reactive or incompatible with the following materials: acids.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : Causes pain and burns in contact with skin. May cause permanent skin damage.

Eyes : Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns.

Ingestion : Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Section 11. Toxicological information

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
sodium hydroxide; caustic soda	Acute EC50 40.38 mg/l Fresh water	Crustaceans - *Ceriodaphnia dubia* - Neonate	48 hours
	Acute LC50 80.59 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Acute LC50 125 ppm Fresh water	Fish - *Gambusia affinis* - Adult	96 hours
	Chronic LOEL 125 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEC 62.5 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	UN1823	SODIUM HYDROXIDE, SOLID	8	II	
ADG	UN1823	SODIUM HYDROXIDE, SOLID	8	II	
IMDG	UN1823	SODIUM HYDROXIDE, SOLID	8	II	
IATA	UN1823	SODIUM HYDROXIDE, SOLID	8	II	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** 2W
ADG Class	No.	**Hazchem code** 2W
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

6

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

Section 15. Regulatory information

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 5

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
CORROSIVE TO METALS - Category 1	Expert judgment
SKIN CORROSION/IRRITATION - Category 1A	Expert judgment
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

Section 16. Any other relevant information

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

CHEK-LOSS™

Version 5

Section 1. Identification

Product identifier : CHEK-LOSS™

Product code : 1094DF

ADG : -

Product type : Powder.

Identified uses : Lost Circulation Material

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
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- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Cellulose	60 - 100	9004-34-6

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Cellulose	**Safe Work Australia (Australia, 10/2022).** TWA: 10 mg/m³ 8 hours. Form: fibres

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls and personal protection

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Light brown.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 0.8 to 1

Solubility(ies) :

Media	Result
cold water	Not soluble

Section 9. Physical and chemical properties and safety characteristics

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Cellulose	LD50 Oral	Rat	>5 g/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Section 11. Toxicological information

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 5

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

Section 16. Any other relevant information

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

CIRCAL 60/16

Version 2

Section 1. Identification

Product identifier : CIRCAL 60/16

Product code : CIRCAL60-16

ADG : -

Product type : Solid.

Identified uses : Calcium carbonate

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Limestone	60 - 100	1317-65-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**EH40/2005 WELs (United Kingdom (UK), 8/2018).** TWA: 10 mg/m³ 8 hours. Form: inhalable dust TWA: 4 mg/m³ 8 hours. Form: respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 825°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.7 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	

Section 14. Transport information

IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

CIRCAL 1000

Version 2

Section 1. Identification

Product identifier : CIRCAL 1000

Product code : CIRCAL1000

ADG : -

Product type : Solid.

Identified uses : Calcium carbonate

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Limestone	60 - 100	1317-65-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**EH40/2005 WELs (United Kingdom (UK), 8/2018).** TWA: 10 mg/m³ 8 hours. Form: inhalable dust TWA: 4 mg/m³ 8 hours. Form: respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 825°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.7 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	

Section 14. Transport information

IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

CIRCAL Y

Version 2

Section 1. Identification

Product identifier : CIRCAL Y

Product code : CIRCALY

ADG : -

Product type : Solid.

Identified uses : Calcium carbonate

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Limestone	60 - 100	1317-65-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**EH40/2005 WELs (United Kingdom (UK), 8/2018).** TWA: 10 mg/m³ 8 hours. Form: inhalable dust TWA: 4 mg/m³ 8 hours. Form: respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 825°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.7 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	

Section 14. Transport information

IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

MAX-GUARD™ E A

Version 1

Section 1. Identification

Product identifier : MAX-GUARD™ E A

Product code : 9110DF

ADG : -

Product type : Liquid.

Identified uses : Shale Control Additive

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

GHS label elements

Hazard pictograms :



GHS08 GHS07

Signal word : WARNING

Hazard statements : H302 - Harmful if swallowed.
H373 - May cause damage to organs through prolonged or repeated exposure.

Section 2. Hazard(s) identification

Precautionary statements

Prevention : Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response : Get medical advice/attention if you feel unwell.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : -, P260, P270, P264, P314, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : Causes digestive tract burns.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	≥10 - ≤30	9046-10-0
acetic acid	≥10 - ≤30	64-19-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention following exposure or if feeling unwell.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
acetic acid	**Safe Work Australia (Australia, 10/2022).** STEL: 37 mg/m³ 15 minutes. STEL: 15 ppm 15 minutes. TWA: 25 mg/m³ 8 hours. TWA: 10 ppm 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Clear.]

Colour : Yellow. - Amber.

Odour : Characteristic.

Odour threshold : Not available.

pH : 6 to 6.5 [Conc. (% w/w): 1% - (H2O)]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not available.

Vapour pressure : Not available.

Relative vapour density : Not available.

Relative density : 1 to 1.1

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials and acids.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
acetic acid	LC50 Inhalation Gas. LD50 Oral LD50 Oral	Mouse Mouse Rat	5620 ppm 4960 mg/kg 3310 mg/kg	1 hours - -

Conclusion/Summary : May be harmful if ingested. Can cause target organ damage.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
MAX-GUARD™ E A	Category 2	-	-

Aspiration hazard

Product/ingredient name	Result
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure : Not available.

Section 11. Toxicological information

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Product/ingredient name	Result	Species	Exposure
acetic acid	Acute EC50 300.82 mg/l Marine water	Algae	72 hours
	Acute EC50 73400 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute EC50 300.82 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 117.6 ul/L Marine water	Crustaceans - *Artemia sp.*	48 hours
	Acute LC50 300.82 mg/l Marine water	Fish	96 hours
	Acute LC50 79000 µg/l Fresh water	Fish - *Pimephales promelas* - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

Persistence and degradability

Not available.

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
acetic acid	-0.17	3.16	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 13 May 2024.

Date of issue/Date of revision : 13 May 2024

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Section 16. Any other relevant information

Classification	Justification
ACUTE TOXICITY (oral) - Category 4 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Expert judgment Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

MIL-BIO SEA 98

Version 4

Section 1. Identification

Product identifier : MIL-BIO SEA 98

Product code : 1658DF

ADG : -

Product type : Liquid.

Identified uses : Biocide

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SKIN SENSITISATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

GHS label elements

Hazard pictograms :



Section 2. Hazard(s) identification

GHS05 GHS08 GHS07

Signal word : DANGER

Hazard statements : H302 + H332 - Harmful if swallowed or if inhaled.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H373 - May cause damage to organs through prolonged or repeated exposure.
H401 - Toxic to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves: > 8 hours (breakthrough time): Nitrile gloves. Neoprene gloves.. Wear eye or face protection: Recommended: Chemical splash goggles.. Avoid release to the environment. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response : Get medical advice/attention if you feel unwell. IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : , P280, P273, P260, P270, P264, P314, P304 + P312, P362 + P364, P302 + P352, P333 + P313, P305 + P351 + P338, P310, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
THPS	≥10 - <25	55566-30-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled.

Skin contact : May cause an allergic skin reaction.

Ingestion : Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,sulfur oxides,phosphorus oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
THPS	**ACGIH TLV (United States, 1/2023). Skin sensitiser.** TWA: 2 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls and personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Nitrile gloves. Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and organic vapour filter (Type A)

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Colourless to light yellow.

Odour : Characteristic.

Odour threshold : Not available.

pH : 3 to 7

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : 108.5°C (227.3°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not available.

Vapour pressure : Not available.

Relative vapour density : Not available.

Relative density : 1.1 (20°C)

Solubility(ies) :

Media	Result
cold water	Soluble

Section 9. Physical and chemical properties and safety characteristics

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
THPS	LC50 Inhalation Dusts and mists	Rat	0.591 mg/l @ 75% THPS (Aqueous solution)	4 hours
	LD50 Dermal	Rat	>2000 mg/kg (75% solution)	-
	LD50 Oral	Rat	575 mg/kg (75% solution)	-

Conclusion/Summary : Harmful if inhaled. May be harmful if ingested. Can cause target organ damage. Adverse health effects could include the following: breathing difficulty or shortness of breath

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : May cause sensitisation by skin contact. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Section 11. Toxicological information

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
THPS	Category 2	oral	-

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled.

Skin contact : May cause an allergic skin reaction.

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Section 12. Ecological information

Toxicity : Toxic to aquatic organisms. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Product/ingredient name	Result	Species	Exposure
THPS	Acute EC50 0.66 mg/l	Algae	96 hours
	Acute EC50 15.1 mg/l	Daphnia	48 hours
	Acute LC50 95 mg/l	Fish	96 hours
	Chronic NOEC 0.064 mg/l	Algae	96 hours
	Chronic NOEC 0.032 mg/l	Daphnia	21 days
	Chronic NOEC 1.1 mg/l	Fish	32 days

Persistence and degradability

Not available.

Product/ingredient name	Test	Result	Dose	Inoculum
THPS	-	70 % - Readily - 21 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
THPS	-	-	Readily

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Section 14. Transport information

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	Hazchem code -
ADG Class	No.	Hazchem code -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 4

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method
SKIN SENSITISATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Calculation method
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

MIL-PAC™ LV

Version 4

Section 1. Identification

Product identifier : MIL-PAC™ LV

Product code : 5201DF

ADG : -

Product type : Powder.

Identified uses : Filtration Control Agent

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Cellulose, carboxymethyl ether, sodium salt	≥90	9004-32-4

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,halogenated compounds,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 6. Accidental release measures

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls and personal protection

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and particulate filter

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Off-white. to Yellow.

Odour : Odourless.

Odour threshold : Not available.

pH : 6 to 8.5 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 0.5 to 0.75

Solubility(ies) :

Media	Result
cold water	Soluble

Partition coefficient: n-octanol/water : Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials and reducing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Cellulose, carboxymethyl ether, sodium salt	LD50 Oral	Rat	27000 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Section 11. Toxicological information

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
Cellulose, carboxymethyl ether, sodium salt	Acute EC50 87.26 mg/l Fresh water	Crustaceans - *Ceriodaphnia dubia* - Neonate	48 hours
	Acute LC50 >20000000 µg/l Fresh water	Fish - *Oncorhynchus mykiss*	96 hours

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 25 March 2024.

Date of issue/Date of revision : 25 March 2024

Date of previous issue : 23 February 2024

Version : 4

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Section 16. Any other relevant information

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

NEW-DRILL™ PLUS

Version 3

Section 1. Identification

Product identifier : NEW-DRILL™ PLUS

Product code : 1072DF

ADG : -

Product type : Solid.

Identified uses : Deflocculant

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
2-Propenoic acid, polymer with 2-propenamide, sodium salt	60 - 100	25987-30-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Additional information

Product forms slippery surface when combined with water.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 6. Accidental release measures

Additional information

Product forms slippery surface when combined with water.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Additional information

Product forms slippery surface when combined with water.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves. Neoprene gloves.

Section 8. Exposure controls and personal protection

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Granular solid.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 5 to 9 [Conc. (% w/w): 5% - (H2O)]

Melting point/freezing point : >150°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: >100°C (>212°F)

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 0.6 to 0.9

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : -2

Auto-ignition temperature : Not applicable.

Decomposition temperature : >150°C

Viscosity : Not available.

Explosive properties : Not available.

Section 9. Physical and chemical properties and safety characteristics

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Section 11. Toxicological information

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Product/ingredient name	$LogP_{ow}$	BCF	Potential
NEW-DRILL™ PLUS	-2	-	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Section 15. Regulatory information

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 3

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

OMYACARB 10

Version 2

Section 1. Identification

Product identifier : OMYACARB 10

Product code : OMYACARB10

ADG : -

Product type : Solid.

Identified uses : Calcium carbonate

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Limestone	60 - 100	1317-65-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**EH40/2005 WELs (United Kingdom (UK), 8/2018).** TWA: 10 mg/m³ 8 hours. Form: inhalable dust TWA: 4 mg/m³ 8 hours. Form: respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 825°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.7 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	

Section 14. Transport information

IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

OMYACARB 20

Version 2

Section 1. Identification

Product identifier : OMYACARB 20

Product code : OMYACARB20

ADG : -

Product type : Solid.

Identified uses : Calcium carbonate

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Limestone	60 - 100	1317-65-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**EH40/2005 WELs (United Kingdom (UK), 8/2018).** TWA: 10 mg/m³ 8 hours. Form: inhalable dust TWA: 4 mg/m³ 8 hours. Form: respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 825°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.7 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	

Section 14. Transport information

IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

OMYACARB 40

Version 2

Section 1. Identification

Product identifier : OMYACARB 40

Product code : OMYACARB40

ADG : -

Product type : Solid.

Identified uses : Calcium carbonate

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Limestone	60 - 100	1317-65-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**EH40/2005 WELs (United Kingdom (UK), 8/2018).** TWA: 10 mg/m³ 8 hours. Form: inhalable dust TWA: 4 mg/m³ 8 hours. Form: respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 825°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.7 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	

Section 14. Transport information

IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

Potassium Chloride (KCl)

Version 5

Section 1. Identification

Product identifier : Potassium Chloride (KCl)

Product code : 5043DF

ADG : -

Product type : Powder.

Identified uses : Shale Control Additive / Salt.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
potassium chloride	60 - 100	7447-40-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : halogenated compounds,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Section 8. Exposure controls and personal protection

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves. Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Crystalline powder.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 5.4 to 8.6 [Conc. (% w/w): 5% - (H2O)]

Melting point/freezing point : 770°C

Boiling point, initial boiling point, and boiling range : 1420°C (2588°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 1.8 to 2

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
potassium chloride	LD50 Oral	Rat	2600 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
potassium chloride	Acute LC50 824.63 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Chronic LOEL 625 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEC 312 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

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Date of previous issue : 10 March 2023

Version : 5

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Section 16. Any other relevant information

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

Salt

Version 4

Section 1. Identification

Product identifier : Salt

Product code : 1874DF

ADG : -

Other means of identification : COMMON SALT, SODIUM CHLORIDE, NaCl, ROCK SALT, SALINE, SEA SALT, TABLE SALT, HALITE

Product type : Powder.

Identified uses : Salt.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Section 2. Hazard(s) identification

Storage : Not applicable.

Disposal : Not applicable.

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Other means of identification : COMMON SALT, SODIUM CHLORIDE, NaCl, ROCK SALT, SALINE, SEA SALT, TABLE SALT, HALITE

Ingredient name	% (w/w)	CAS number
sodium chloride	60 - 100	7647-14-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Section 4. First aid measures

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : halogenated compounds,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 8. Exposure controls and personal protection

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): nitrile or neoprene

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 6.7 to 7.3 [Conc. (% w/w): 1% - (H2O)]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Relative density : Not available.

Solubility(ies) :

Media	Result
cold water	Partially soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Section 11. Toxicological information

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Salt

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - *Cypris subglobosa*	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - *Daphnia magna*	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - *Lemna minor*	96 hours
	Acute LC50 1294600 µg/l Fresh water	Fish - *Lepomis macrochirus*	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - *Morone saxatilis* - Larvae	96 hours
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - *Lemna minor*	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - *Daphnia pulex*	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - *Gambusia holbrooki* - Adult	8 weeks
	Chronic NOEC 643000 µg/l Fresh water	Fish - *Oncorhynchus mykiss* - Egg	56 days

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Section 14. Transport information

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 4

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

OVACHEM
Tomorrow's Chemistry Today
a Barium Selat Company

Safety Data Sheet
OVA COL 110 LC

Section 1: Chemical Product and Company Identification

Product Name: OVA COL 110 LC

CAS#: 9004-77-7

EC-No.: 500-012-0

TSCA: Not applicable.

CI#: Not applicable.

Synonym: Not applicable.

Chemical Name: Polyethylene glycol

Chemical Formula: Not available

Contact Information:

OVA CHEM SDN. BHD.
No 6-1, Jalan Tasik Utama 7
Medan Niaga Tasik Damai
57000 Sungai Besi, Kuala Lumpur.
Tel/Fax: +603 9054 1203

For emergency assistance, call: +6012 368 3559

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Glycol Ether	9004-77-7	100

Toxicological Data on Ingredients: Not available.

Section 3: Hazards Identification

OSHA Hazards: Target Organ Effect

Target Organs: Female reproductive system, Male reproductive system

GHS Label elements, including precautionary statements:

Pictogram



Signal Word Warning

Hazard statement(s)
H302 + H312 Harmful if swallowed or in contact with skin.

Precautionary statement(s)

P280	Wear protective gloves/protective clothing.

HMIS Classification

Health hazard:	1
Chronic health hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	0
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation:	May be harmful if inhaled. May cause respiratory tract irritation.
Skin:	May be harmful if absorbed through skin. May cause skin irritation.
Eyes:	May cause eye irritation.
Inhestion:	May be harmful if swallowed.

Section 4: First Aid Measures

Eye Contact:
In case of contact with eyes, rinse with plenty of water and contact Doctor of Poisons Information Centre.

Skin Contact:
If skin or hair contact occurs, flush skin and hair with running water (and soap if available) and seek medical attention in event of irritation.

Inhalation:
If inhaled, remove to fresh air. Keep person warm and at rest. If not breathing or breathing is difficult, provide artificial respiration and oxygen by trained personnel. Get medical attention if symptoms appear.

Ingestion:
Wash out mouth with water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Section 5: Fire and Explosion Data

Extinguishing media: If extinction, use dry chemical powder, foam, BCF (where regulation permit), carbon dioxide or water spray or fog if large fires extinction.

Special exposure hazard: Heating may cause expansion or decomposition leading to violent rupture of containers. Mists containing combustible materials may be explosive. Slight fire hazard when exposed to heat or flame.

Hazardous thermal decomposition products **:** Decomposition products may include the following materials: carbon dioxide, carbon monoxide, acrid smoke, other pyrolysis products typical of burning organic material, poisonous fumes and corrosive fumes.

Advice for fire-fighters: Fire-fighters should wear appropriate protective equipment.

Fire Incompatibility: Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:
Take note of any information in Section 8 on suitable and unsuitable materials, if specialised clothing is required to deal with the spillage.

Environmental precautions:
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollutions.

Small spill:
Stop leak if without risk and move containers from spill area. If water soluble, dilute it with water. If absorb with an inert dry material, mop up. Place in an appropiate waste disposal container and dispose of via a licensed waste disposal contractor.

Large spill:
Stop leak if without risk and move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. earth, sand, vermiculite or diatomaceous earth and place in container for disposal according to local regulations and dispose of via a licensed waste disposal contractor.

Section 7: Handling and Storage

Precautions:
Do not eat, drink and smoke in areas where this material is handled, stored and processed. Wash hands and face after handled this material.
Storage:
Keep it in a dry, cool and well-ventilated area. Keep container tightly closed and sealed until ready for use.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
To minimize exposures, ensure adequate ventilation.
Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Pale yellow liquid

Odor: Faint

Taste: Not available.

Molecular Weight: not available

pH (50%): 6 - 8.5

Boiling Point: > 250°C

Flash Point: > 130°C

Auto Ignition Temperature: > 280°C

Specific Gravity: 1.01

Vapor Pressure: Not applicable.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Soluble in water

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Reactivity: No specific data.

Instability Temperature: Not available.

Conditions to avoid: No specific data.

Incompatibility with various substances: No specific data.

Corrosivity: Not available.

Special Remarks on Corrosivity: Not available.

Section 11: Toxicological Information

Acute toxicity: No data available.

Skin irritation/Corrosion: No data available.

Serious eye damage/eye irritation: No data available.

Respiratory or skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity:

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure (Globally Harmonized System): No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System): No data available

Aspiration hazard: No data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure

Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation, Conjunctivitis., Stomach/intestinal disorders

Additional Information

Section 12: Ecological Information

Ecotoxicity and aqua toxicity: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50 (Lepomis macrochirus (Bluegill sunfish)): 10,650 mg/l Exposure time: 96.0 h LC50 (Gambusia affinis (Mosquito fish)): 13,400 mg/l Exposure time: 96.0 h

Biodegradability: Bio degradable

Bioaccumulation: : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB)

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50)

Section 13: Disposal Considerations

Waste Disposal:
The generation of waste should be avoided or minimised wherever possible. Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

	Land Transport (ADR/RID)	***Sea Transport (IMDG)***	***Air Transport (ICAO/IATA)***
UN-Number:	Not regulated	Not regulated	Not regulated
UN Proper shipping name:	Not regulated	Not regulated	Not regulated
Transport hazard class:	Not regulated	Not regulated	Not regulated
Packaging group:	Not regulated	Not regulated	Not regulated
Environmental hazards:	No	No	No
Special precautions for user:	See section 3	See section 3	See section 3
Transport in bulk according to Annex II of MARPOL and IBC code:	Not regulated	Not regulated	Not regulated

Section 15: Other Regulatory Information

EU Regulations: None of the components are listed.

Other EU Regulations: All components are exempted.

Chemical Safety Assessment:
This product contains substances for which Chemical Safety Assessments are still required.

Section 16: Other Information

Other Special Considerations: Not available.

Date updated: 3/10/2022

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall OVA Chem be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if OVA Chem has been advised of the possibility of such damages.

SAFETY DATA SHEET

Soda Ash

Version 4

Section 1. Identification

Product identifier : Soda Ash

Product code : 5046DF

ADG : -

Other means of identification : Sodium carbonate

Product type : Solid.

Identified uses : pH control

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :



GHS05 GHS07

Section 2. Hazard(s) identification

Signal word : DANGER

Hazard statements : H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.

Precautionary statements

Prevention : Wear eye or face protection. Avoid breathing dust.

Response : IF INHALED: Call a POISON CENTER or doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : -, P280, P261, P304 + P312, P305 + P351 + P338, P310, P403 + P233, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Other means of identification : Sodium carbonate

Ingredient name	% (w/w)	CAS number
sodium carbonate	60 - 100	497-19-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

Section 8. Exposure controls and personal protection

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Nitrile gloves. or Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Granular solid.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 11.4

Section 9. Physical and chemical properties and safety characteristics

Melting point/freezing point	:	851.11°C
Boiling point, initial boiling point, and boiling range	:	Not available.
Flash point	:	Not applicable.
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Non-flammable.
Lower and upper explosion limit/ flammability limit	:	Not applicable.
Vapour pressure	:	Not available.
Relative vapour density	:	Not applicable.
Relative density	:	2.509 Not Available.
Partition coefficient: n-octanol/water	:	Not applicable.
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	Not available.
Viscosity	:	Not available.
Explosive properties	:	Not available.
Oxidising properties	:	Not available.

Other information

Pour point	:	Not available.

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	No specific data.
Incompatible materials	:	Reactive or incompatible with the following materials: acids. Aluminum powder, acids, fluorine, molten lithium.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary	:	No known significant effects or critical hazards.

Irritation/Corrosion

Skin	:	No known significant effects or critical hazards.
Eyes	:	Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Section 11. Toxicological information

Respiratory : May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
sodium carbonate	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Section 11. Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
sodium carbonate	Acute EC50 242000 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute LC50 176000 µg/l Fresh water	Crustaceans - *Amphipoda*	48 hours
	Acute LC50 265000 µg/l Fresh water	Daphnia - *Daphnia magna*	48 hours
	Acute LC50 300000 µg/l Fresh water	Fish - *Lepomis macrochirus*	96 hours

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Section 14. Transport information

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	Hazchem code -
ADG Class	No.	Hazchem code -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

5

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

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IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3	Calculation method Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

XAN-PLEX™ D

Version 5

Section 1. Identification

Product identifier : XAN-PLEX™ D

Product code : 1171DF

ADG : -

Product type : Powder.

Identified uses : Viscosifier

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides,sulfur oxides,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Section 8. Exposure controls and personal protection

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves. Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : White. to Tan.

Odour : Faint odour.

Odour threshold : Not available.

pH : 7 [Conc. (% w/w): 5% - (H2O)]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : >200°C (>392°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 1.55

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
XAN-PLEX™ D	Acute LC50 179.15 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Chronic LOEL 250 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEC 125 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Persistence and degradability

Section 12. Ecological information

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 5

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

Section 16. Any other relevant information

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

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SAFETY DATA SHEET

OVA TRICIDE 70

Section 1. Identification

Product identifier	:	OVA TRICIDE 70
Product code	:	OVA TRICIDE 70
ADG	:	AMINES, LIQUID, CORROSIVE, N.O.S. (contains triazine)
Product type	:	Liquid
Identified uses	:	Biocide
Importer's details	:	Baker Hughes, Australia 631 Karel Avenue, Jandakot, Western Australia 6164, Australia Tel: 08 6595 7100
Manufacturer's details	:	OVA CHEM SDN. BHD. A Barium Selat Company No 6-1, Jalan Tasik Utama 7, Medan Niaga Tasik Damai, 57000 Sungai Besi, Kuala Lumpur. Tel/Fax: +603 9054 1203
Emergency telephone number	:	CHEMTREC Emergency Telephone Numbers (Asia Pacific Region): - Australia: (02) 9037 2994 - Brunei: +(65)-31581349 (Mandarin/English) - China: 4001-204937 (Mandarin) * - Hong Kong: 800-968-793 (Cantonese) * - Indonesia: 001-803-017-9114 (Bahasa Indonesian) * - Japan: +(81)-345209637 (Japanese) - Malaysia: 1-800-815-308 (Bahasa Malay) * - New Zealand: 09 801 0034 - Philippines: 1-800-1-116-1020 (Tagalog) * - PNG: +(61) 2 9037 2994 - Singapore: 800-101-2201 (Mandarin) * - South Korea: 00-308-13-2549 (Korean) * - Taiwan: 00801-14-8954 (Mandarin) * - Thailand: 001-800-13-203-9987 (Thai) * - Vietnam: +(84)-838012436 (Vietnamese) - UK: +(44) 870-820-0418 - USA: +(1) 703-527-3887 (CHEMTREC International 24 hour) * Number can only be dialled in-country
Date	:	20 May 2024

This is a Baker Hughes cover page for our Supplier's SDS. A copy of this SDS has been provided to CHEMTREC
Baker Hughes Confidential

OVACHEM
Tomorrow's Chemistry Today

a Barium Selat Company

Safety Data Sheet
OVA TRICIDE 70%

Section 1: Chemical Product and Company Identification

Product Name: OVA TRICIDE 70

CAS#: Not available.

RTECS: Not available.

TSCA: Not available.

CI#: Not available.

Synonym: Biocide

Chemical Name: Triazine based

Chemical Formula: Not available

Contact Information:

OVA CHEM SDN. BHD.
No 6, Jalan Tasik Utama 7
Medan Niaga Tasik Damai
57000 Sungai Besi, Kuala Lumpur.
Tel/Fax: +603 9054 1203

For emergency assistance, call: +6012 368 3559

Section 2: Composition and Information on Ingredients

Composition: Mixture

Name	CAS #	% by Weight
Triazine	Various	70-80
Water	7732-18-5	20-30

Section 3: Hazards Identification

Health Hazard: H304-May be fatal if swallowed

H315-Causes skin irritation

H319-Causes serious eye irritation

H336-May cause dizziness

Physical Hazard: No data available



Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Inhalation:

Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

Ingestion:

If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. No specific antidote. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done.

Section 5: Fire and Explosion Data

Flash Point: > 150 ˚C

Auto Ignition Temperature: > 250˚C

General Information As in any fire, wear a self-contained breathing apparatus in pressure demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Suitable Extinguishing Media
Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguish media, which shall not be used for safety reasons
Do not use direct water stream. May spread fire

Special exposure hazards in a fire:
During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Special protective equipment for fire fighters:
Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Other instructions: On leakage it becomes slippery

Section 6: Accidental Release Measures

Personal Precautions: Wear protective clothing as described in Section 8 of this safety data sheet.

Environmental Precautions: Do not allow to enter drains, sewers or watercourses.

Small Spill: Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorp spill with sand, earth, inert material or vermiculite.

Large Spill: Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course.

Section 7: Handling and Storage

Precautions: Do not ingest. Do not breathe vapours/spray. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Avoid reaction with oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Exposure limit values:
Not applicable
Exposure controls:
Occupational exposure controls:
Use in a well-ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
Respiratory protection
On exposure wear a NIOSH certified. European Standard EN 149 or equivalent respirator when using this product.
Hand protection
Protective gloves (Europe EN374, US F739)
Eye protection
Safety goggles (European standard – EN 166)
Skin protection
Normal clothes
General protective measures
Avoid contact with skin and eyes, do not inhale vapour
Environmental exposure controls
Not any

Section 9: Physical and Chemical Properties

Physical state and appearance: Pale yellow liquid

Odor: Ammonical

pH (5%): >10.0

Flash Point: >150 ˚C

Boiling Point: >100˚C

Auto-Ignition Temperature: >250˚C

Specific Gravity : 1.15

Relative density: Not available.

Critical Temperature: Not available.

Vapor Pressure: Not applicable.

Volatility: Not available.

Odor Threshold: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Miscible in water

Section 10: Stability and Reactivity Data

Reactivity: Will not polymerize.

Chemical stability: Stable at typical use temperature (max 100 ˚C)

Materials to avoid: Avoid contact with: Strong acids, strong oxidizers.

Conditions to avoid: Do not distill to dryness. Product can oxidize at elevated temperatures.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition. Emits carbon oxides and nitrogen oxides when heated to decomposition.

Section 11: Toxicological Information

Acute Toxicity

Inhalation

Harmful if inhaled. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
LD50 (oral,rat) = 2,900 mg/kg
LD50 (dermal, rabbit) = 1,840 mg/kg

Eye Contact

Causes serious eye damage

Skin Contact: Causes skin irritation. May be absorbed through the skin and contribute to the symptoms listed under ingestion.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

Chronic Effects/Carcinogenicity: No component of this product present at level greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.

Section 12: Ecological Information

Ecotoxicity and aquatoxicity:
Acute for fish:
Poecilia reticulata: LC50 (96 h) > 100 mg/l
Longterm for fish: NOEC > 100 mg/l
Acute for invertebrates: Daphnia magna: EC50 (48 h) = 62.6 mg/l Longterm for invertebrates: no data available
Effective concentration for algae: EC50 (72 h) > 77.7 mg/l
Algae: ErC10 (72 h) = 0.4 mg/l
Summary for classification: Not classified

Biodegradibility: Biodegradable

Mobility: Potential for mobility in soil is very high (Koc between 0 and 50)

Bioaccumulative potential: BCF < 50

Other adverse effects: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Section 13: Disposal Considerations

Disposal Method
Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should not be deposited into a sewage facility.

Packaging Disposal
Follow all applicable national or local regulations. Contaminated packaging may be disposed of by rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

Regulatory Disposal Information
RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning
Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAYEXPLODE AND CAUSE INJURY OR DEATH.

Section 14: Transport Information

IMDG/IMO	: Corrosive Liquid
UN Number	: 2735
UN Proper Shipping Name	: Amines, Liquid, Corrosive
Transport Hazard Class(es)	: 8
Packing Group	: III
Environmental Hazard	: Not applicable
NZ 5433.1999	: Corrosive Liquid
UN Number	: 2735
UN Proper Shipping Name	: Amines, Liquid, Corrosive
Transport Hazard Class(es)	: 8
Packing Group	: III
IATA/ICAO	: Corrosive Liquid
UN Number	: 2735
UN Proper Shipping Name	: Amines, Liquid, Corrosive
Transport Hazard Class(es)	: 8
Packing Group	: III
Special Precautions for User	: Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	: Not applicable

Section 15: Regulatory Information

Other Label Information :

EU regulations concerning safety, health and environmental specific for the substance or mixture, as amended:

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC; Directive

2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives; Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances.

Legislation and regulations :

Dangerous Substance Directive 67/548/EEC. The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No.895). Avfallsförordningen (2011:927).

Section 16: Other Information

Other Special Considerations: Not available.

Last Updated: 19/06/2023

GENERAL INFORMATION	
HMIS HEALTH	2
HMIS Flammability	1
HMIS Physical Hazard	0



The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall OVA Chem be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if OVA Chem has been advised of the possibility of such damage.

SAFETY DATA SHEET

Bentonite

Version 2

Section 1. Identification

Product identifier : Bentonite

Product code : 100120

ADG : -

Product type : Powder.

Identified uses : Cement additive / Drilling Fluid Viscosifier

Supplier's details : Baker Hughes, Australia
108 Poole Street,
Welshpool,
Western Australia 6106,
Australia

Tel: +618 9350 3800
Fax: +618 9350 5453

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : CARCINOGENICITY - Category 1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

GHS label elements

Hazard pictograms :



GHS08

Signal word : DANGER

Section 2. Hazard(s) identification

Hazard statements : H350 - May cause cancer.
H373 - May cause damage to organs through prolonged or repeated exposure. (lungs)

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves: > 8 hours (breakthrough time): Nitrile or Neoprene gloves.. Wear protective clothing. Wear eye or face protection. Wear hearing protection. Do not breathe dust or mist.

Response : IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : -, P201, P280, P260, P308 + P313, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Bentonite	60 - 100	1302-78-9
crystalline silica, respirable powder	5 - 10	14808-60-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
crystalline silica, respirable powder	**Safe Work Australia (Australia, 1/2014).** TWA: 0.1 mg/m³ 8 hours. Form: Respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Nitrile or Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Wear a respirator conforming to EN140 with type A/P2 filter or better.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder./ Granules]

Colour : Grey.

Odour : Odourless.

Odour threshold : Not available.

pH : 8 to 10 [Conc. (% w/w): 5%]

Melting point/freezing point : 1450 to 1580°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.4 to 2.6

Solubility(ies) :

Media	Result
☑ cold water	Not soluble
hot water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
crystalline silica, respirable powder	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	inhalation	lungs

Aspiration hazard

Not available.

Information on likely routes of exposure : Routes of entry anticipated: Inhalation.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Section 11. Toxicological information

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
Bentonite	Acute LC50 19000000 µg/l Fresh water	Fish - *Oncorhynchus mykiss*	96 hours

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Section 15. Regulatory information

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 26 February 2024.

Date of issue/Date of revision : 26 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
CARCINOGENICITY - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

BRINE-PAC™ 1500A

Version 1

Section 1. Identification

Product identifier : BRINE-PAC™ 1500A

Product code : 5039DF

ADG : AMINES, LIQUID, CORROSIVE, N.O.S. (contains alkylamine)

Product type : Liquid.

Identified uses : Corrosion inhibitor

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
SKIN CORROSION/IRRITATION - Category 1
SKIN SENSITISATION - Category 1

GHS label elements

Hazard pictograms :



GHS05 GHS07

Signal word : DANGER

Section 2. Hazard(s) identification

Hazard statements : H227 - Combustible liquid.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing vapour.

Response : IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : P103, P102, P101, P280, P210, P261, P304 + P310, P301 + P310, P330, P331, P303 + P361 + P353, P310, P363, P302 + P352, P333 + P313, P305 + P351 + P338, P310, P405, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
3,6-diazaoctanethylenediamin	≥10 - <25	112-24-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Section 4. First aid measures

Inhalation : Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Call a poison center or physician. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, alcohol-resistant foam or water spray (fog).

Unsuitable extinguishing media : Do not use water jet.

Section 5. Firefighting measures

Specific hazards arising from the chemical : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : 2X

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Section 7. Handling and storage

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Separate from acids. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
3,6-diazaoctanethylenediamin	**DFG MAC-values list (Germany, 7/2023). Skin sensitiser.**

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls and personal protection

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Brown.

Odour : Not available.

Odour threshold : Not available.

pH : 11.3 to 13.3 [Conc. (% w/w): 100%]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : >250°C (>482°F)

Flash point : Closed cup: >70°C (>158°F)

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not available.

Vapour pressure : Not available.

Relative vapour density : Not available.

Relative density : 0.95 to 1.05

Solubility(ies) :

Section 9. Physical and chemical properties and safety characteristics

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : 280°C (536°F)

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials and acids.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
3,6-diazaoctanethylenediamin	LD50 Dermal LD50 Oral	Rabbit Rat	805 mg/kg 2500 mg/kg	- -

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : May cause sensitisation by skin contact. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Section 11. Toxicological information

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Product/ingredient name	Result	Species	Exposure
3,6-diazaoctanethylenediamin	Acute EC50 3700 µg/l Fresh water	Algae - *Pseudokirchneriella subcapitata*	96 hours
	Acute LC50 33900 µg/l Fresh water	Daphnia - *Daphnia magna*	48 hours

Persistence and degradability

Not available.

Product/ingredient name	$LogP_{ow}$	BCF	Potential
3,6-diazaoctanethylenediamin	-1.66 to -1.4	-	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (contains alkylamine)	8	III	
ADG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (contains alkylamine)	8	III	
IMDG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (contains alkylamine)	8	III	
IATA	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (contains alkylamine)	8	III	

PG* : Packing group

Section 14. Transport information

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** 2X
ADG Class	No.	**Hazchem code** 2X
IMDG Class	No.	**Emergency schedules** F-A S-B
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 10 September 2024.

Date of issue/Date of revision : 10 September 2024

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 4	On basis of test data
SKIN CORROSION/IRRITATION - Category 1	On basis of test data
SKIN SENSITISATION - Category 1	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

Calcium Chloride

Version 4

Section 1. Identification

Product identifier : Calcium Chloride

Product code : 5008DF

ADG : -

Product type : Powder.

Identified uses : Weighting Agent / Salt.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :



GHS07

Signal word : WARNING

Hazard statements : H319 - Causes serious eye irritation.

Precautionary statements

Section 2. Hazard(s) identification

Prevention : Wear eye or face protection.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Not applicable.

Precautionary statements (Code) : -, P280, P305 + P351 + P338, P337 + P313, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
calcium chloride	60 - 100	10043-52-4

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 4. First aid measures

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : halogenated compounds,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 8. Exposure controls and personal protection

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): neoprene or nitrile Gloves

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder or flakes.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 9 to 10.5 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : 772°C

Boiling point, initial boiling point, and boiling range : 1600°C (2912°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.1 to 2.2

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Additional information : Water-reactive

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: moisture.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : May cause eye irritation.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
calcium chloride	Acute EC50 3130000 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute EC50 464000 µg/l Fresh water	Daphnia - *Daphnia magna*	48 hours
	Acute LC50 270 mg/l Marine water	Crustaceans - *Americamysis bahia*	48 hours
	Acute LC50 2110 mg/l Fresh water	Fish - *Pimephales promelas*	96 hours

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 4

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships,

Section 16. Any other relevant information

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

CITRIC ACID

Version 4

Section 1. Identification

Product identifier : CITRIC ACID

Product code : 5011DF

ADG : -

Product type : Solid.

Identified uses : Alkalinity Control

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :



GHS07

Signal word : WARNING

Section 2. Hazard(s) identification

Hazard statements : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves: > 8 hours (breakthrough time): Neoprene gloves.. Wear eye or face protection. Avoid breathing dust. Wash thoroughly after handling.

Response : IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : P280, P261, P264, P304 + P312, P362 + P364, P302 + P352, P305 + P351 + P338, P337 + P313, P403 + P233, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : Causes digestive tract burns.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Citric acid	60 - 100	77-92-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : irritation,redness

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Section 8. Exposure controls and personal protection

Ingredient name	Exposure limits
Citric acid	**DFG MAC-values list (Germany, 7/2023).** PEAK: 4 mg/m³, 4 times per shift, 15 minutes. Form: inhalable fraction TWA: 2 mg/m³ 8 hours. Form: inhalable fraction

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and particulate filter

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid.

Colour : White.

Section 9. Physical and chemical properties and safety characteristics

Odour : Odourless.

Odour threshold : Not available.

pH : 2.1 [Conc. (% w/w): 0.1%]

Melting point/freezing point : 153°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: 100°C (212°F)

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 1.54

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Citric acid	LD50 Oral	Rat	3 g/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : May cause skin irritation.

Eyes : May cause eye irritation.

Respiratory : May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Citric acid	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : irritation,redness

Ingestion : Adverse symptoms may include the following:,stomach pains

Section 11. Toxicological information

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
Citric acid	Acute LC50 160000 µg/l Marine water	Crustaceans - *Carcinus maenas* - Adult	48 hours
	Acute LC50 71 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Chronic NOEC 7.81 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEL 15.62 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Citric acid	-1.8	-	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Section 15. Regulatory information

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 20 February 2024

Date of previous issue : 10 March 2023

Version : 4

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
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IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3	Calculation method Calculation method Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

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SAFETY DATA SHEET

DESCO CF

Version 2

Section 1. Identification

Product identifier : DESCO CF

Product code : 6279DF

ADG : -

Product type : Powder.

Identified uses : Not available

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : CARCINOGENICITY - Category 1
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

GHS label elements

Hazard pictograms :



GHS08

Signal word : DANGER

Hazard statements : H350 - May cause cancer.
H412 - Harmful to aquatic life with long lasting effects.

Section 2. Hazard(s) identification

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves: > 8 hours (breakthrough time): nitrile Gloves. Wear protective clothing. Wear eye or face protection. Wear hearing protection. Avoid release to the environment.

Response : IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : , P201, P280, P273, P308 + P313, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Tannins, sulfomethylated	≥75 - ≤90	68201-64-9
crystalline silica, respirable powder	<1	14808-60-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : sulfur oxides,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing dust. Avoid release to the environment. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
crystalline silica, respirable powder	**Safe Work Australia (Australia, 4/2018).** TWA: 0.1 mg/m³ 8 hours. Form: Respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): nitrile Gloves

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and particulate filter

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Red. / Brown.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : Not available.

Solubility(ies) :

Media	Result
cold water	Very slightly soluble
hot water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	inhalation	lungs

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Ingredient name	Schedule
crystalline silica, respirable powder	Restricted hazardous chemical [For abrasive blasting at a concentration of greater than 1%]

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
CARCINOGENICITY - Category 1	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

Driscal® D Polymer

Version 2.3 Revision Date 2021-09-29

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : Driscal® D Polymer
Material : 1112534, 1016818

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Combustible dust

Labeling

Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.

Potential Health Effects

Physical Hazards : Mechanical processing may form combustible dust concentrations in air and thermal processing at elevated temperatures may generate simple hydrocarbons and carbon oxides.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : High Temperature Polymer

Component	CAS-No.	Weight %
Sodium salt of sulfonated acrylamide and vinyl lactam	Proprietary	100

SECTION 4: First aid measures

General advice : No hazards which require special first aid measures.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point : Not applicable

Autoignition temperature : No data available

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting	:	Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

SECTION 6: Accidental release measures

Personal precautions	:	Avoid dust formation.
Environmental precautions	:	No special environmental precautions required.
Methods for cleaning up	:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
Additional advice	:	Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Advice on protection against fire and explosion	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers	:	Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	No materials to be especially mentioned.

SECTION 8: Exposure controls/personal protection

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Dusts and Mists / P100. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Safety glasses.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Powder
Physical state	:	solid
Color	:	White
Odor	:	no odor
Odor Threshold	:	No data available

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	No
Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Molecular weight	:	Not applicable
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	No data available
Vapor pressure	:	No data available
Relative density	:	1.44
Density	:	No data available
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Pow: < 3
Viscosity, kinematic	:	No data available
Relative vapor density	:	No data available
Evaporation rate	:	No data available

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Conditions to avoid : No data available.

Materials to avoid : No data available.

Thermal decomposition : No data available

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Driscal® D Polymer
Further information : The product contains no substances classified as hazardous to health in concentrations which should be taken into account.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish : LC50: > 1,800 mg/l
Exposure time: 96 h
Species: Scophthalmus maximus (Flatfish, Flounder)
static test Method: PARCOM Protocol Part B

Toxicity to daphnia and other aquatic invertebrates : LC50: 599 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
static test Method: ISO TC147/SC5/WG2

Toxicity to algae : EC50: 2,693 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (marine diatom)
static test Method: ISO 10253

Biodegradability : This material is not expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation : Accumulation in aquatic organisms is unlikely.
The polymer is too large to be bioavailable.

Mobility : No data available

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic : This material is not expected to be harmful to aquatic

hazard		organisms.
Long-term (chronic) aquatic hazard	:	This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE

OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards	:	Combustible dust
CERCLA Reportable Quantity	:	This material does not contain any components with a CERCLA RQ.
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.
SARA 313 Components	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

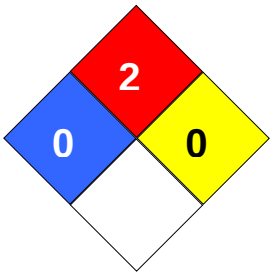
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	All substances listed as active on the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Other AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory
Korea KECI	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	This product contains one or more substances that have been notified under New Substances Notification laws. However, only CPChem and other independent notifiers are approved to be the importers of record.

SECTION 16: Other information

NFPA Classification : Health Hazard: 0
Fire Hazard: 2
Reactivity Hazard: 0



Further information

Legacy SDS Number : 244990

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

SAFETY DATA SHEET

KWIK-SEAL (Fine / Medium / Coarse)

Version 3

Section 1. Identification

Product identifier : KWIK-SEAL (Fine / Medium / Coarse)

Product code : 1142DF

ADG : -

Product type : Solid.

Identified uses : Not available

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Cellulose	≥30 - ≤60	9004-34-6

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Cellulose	**Safe Work Australia (Australia, 10/2022).** TWA: 10 mg/m³ 8 hours. Form: fibres

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Flakes. Fibrous solid.]

Colour : Tan.

Odour : Odourless.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 0.9 to 1.2

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Cellulose	LD50 Oral	Rat	>5 g/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

Section 14. Transport information

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	Hazchem code -
ADG Class	No.	Hazchem code -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 3

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

LC-LUBE™ (All Grades)

Version 4

Section 1. Identification

Product identifier : LC-LUBE™ (All Grades)

Product code : 1144DF

ADG : -

Product type : Powder.

Identified uses : Solid lubricant. / Lost Circulation Material

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Natural graphite	60 - 100	7782-42-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Natural graphite	**Safe Work Australia (Australia, 1/2014).** TWA: 3 mg/m³ 8 hours. Form: Respirable dust

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): nitrile Gloves

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and particulate filter

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Grey. to Black. [Dark]

Odour : Odourless.

Odour threshold : Not available.

pH : 6.5 to 10.5 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : >2000°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : 0.18 kPa (1.33 mm Hg)

Relative vapour density : Not applicable.

Relative density : 2.25

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : >250°C

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Section 9. Physical and chemical properties and safety characteristics

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Section 11. Toxicological information

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	Hazchem code -
ADG Class	No.	Hazchem code -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Section 15. Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 4

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

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SAFETY DATA SHEET

Magnesium Oxide

Version 3

Section 1. Identification

Product identifier : Magnesium Oxide

Product code : 1080DF

ADG : -

Product type : Solid.

Identified uses : pH control.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
magnesium oxide	60 - 100	1309-48-4

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
magnesium oxide	**Safe Work Australia (Australia, 10/2022).** TWA: 10 mg/m³ 8 hours. Form: Fume

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Crystalline solid.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 10 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : 2852°C

Boiling point, initial boiling point, and boiling range : 3600°C (6512°F)

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 3.58 (20°C)

Solubility(ies) :

Media	Result
cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Section 11. Toxicological information

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
magnesium oxide	Acute LC50 180.91 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Chronic LOEL 250 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEC 125 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Section 15. Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 3

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

MAX-GUARD™ PLUS A

Version 2

Section 1. Identification

Product identifier : MAX-GUARD™ PLUS A

Product code : 5044DF

ADG :

Product type : Liquid.

Identified uses : Shale Control Additive

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 1A
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SKIN SENSITISATION - Category 1

GHS label elements

Hazard pictograms :



GHS05 GHS07

Signal word : DANGER

Section 2. Hazard(s) identification

Hazard statements : H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear protective gloves, protective clothing and eye or face protection. Avoid breathing vapour.

Response : IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : P103, P102, P101, P280, P261, P304 + P310, P301 + P310, P330, P331, P303 + P361 + P353, P310, P363, P302 + P352, P333 + P313, P305 + P351 + P338, P310, P405, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
1,2-Ethanediamine, N-(2-aminoethyl)-	≥10 - ≤30	111-40-0
acetic acid	≥10 - ≤30	64-19-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Section 4. First aid measures

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Call a poison center or physician. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Firefighting measures

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code :

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1,2-Ethanediamine, N-(2-aminoethyl)-	**Safe Work Australia (Australia, 1/2024). Absorbed through skin. Skin sensitiser. Inhalation sensitiser.** TWA: 4.2 mg/m³ 8 hours. TWA: 1 ppm 8 hours.
acetic acid	**Safe Work Australia (Australia, 1/2024).** STEL: 37 mg/m³ 15 minutes. STEL: 15 ppm 15 minutes. TWA: 25 mg/m³ 8 hours. TWA: 10 ppm 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls and personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Light Amber to pale yellow. [Transparent]

Odour : Ammonia-like. [Slight]

Odour threshold : Not available.

pH : 8 to 10

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: >100°C (>212°F)

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not available.

Vapour pressure : Not available.

Relative vapour density : Not available.

Relative density : 1.05 to 1.15

Not Available.

Miscible with water : Yes.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Section 9. Physical and chemical properties and safety characteristics

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials, metals, acids and alkalis.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,2-Ethanediamine, N-(2-aminoethyl)-	LD50 Dermal	Rabbit	1090 mg/kg	-
	LD50 Oral	Rat	1080 mg/kg	-
acetic acid	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Dermal	Rabbit	1060 uL/kg	-
	LD50 Oral	Mouse	4960 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : Causes pain and burns in contact with skin. May cause permanent skin damage.

Eyes : Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : May cause sensitisation by skin contact. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
1,2-Ethanediamine, N-(2-aminoethyl)-	Acute EC50 345600 µg/l Fresh water	Algae - *Pseudokirchneriella subcapitata*	96 hours
	Acute LC50 53500 µg/l Fresh water	Daphnia - *Daphnia magna*	48 hours
	Acute LC50 1014000 µg/l Fresh water	Fish - *Poecilia reticulata*	96 hours
acetic acid	NOEC 1150 mg/l	Micro-organism	16 hours
	Acute EC50 >1000 mg/l	Algae	72 hours
	Acute EC50 73400 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute EC50 >1000 mg/l Fresh water	Daphnia	48 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - *Daphnia magna* - Neonate	48 hours
	Acute LC50 50.1 ul/L Marine water	Crustaceans - *Artemia sp.*	48 hours
	Acute LC50 >1000 mg/l	Fish	96 hours
	Acute LC50 251 ppm Fresh water	Fish - *Gambusia affinis* - Adult	96 hours
	Acute LC50 75000 µg/l Fresh water	Fish - *Lepomis macrochirus*	96 hours
	Acute LC50 88000 µg/l Fresh water	Fish - *Pimephales promelas* - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

Persistence and degradability

Not available.

Product/ingredient name	Test	Result	Dose	Inoculum
acetic acid	-	96 % - Readily - 20 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
acetic acid	-	-	Readily

Product/ingredient name	$LogP_{ow}$	BCF	Potential
1,2-Ethanediamine, N-(2-aminoethyl)-	-5.58	2.8 to 6.3	Low
acetic acid	-0.17	3.16	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	Hazchem code -
ADG Class	No.	Hazchem code -
IMDG Class	No.	
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Section 15. Regulatory information

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 24 October 2024.

Date of issue/Date of revision : 24 October 2024

Date of previous issue : 30 August 2024

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 1A	Expert judgment
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Expert judgment
SKIN SENSITISATION - Category 1	Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

Revision date: 07-Feb-2025

Revision Number 6

Section 1: Identification

Product identifier

Product Name MONOETHANOLAMINE

Product Code(s) 000030102001

Other means of identification

UN number or ID number 2491

CAS No. 141-43-5

Synonyms MEA; Ethanolamine; 2-Aminoethanol; Ethylolamine; 2-Hydroxyethylamine; beta-Ethanolamine.

Recommended use of the chemical and restrictions on use

Recommended use Gas treating. Chemical intermediate. Metal complexing agent. Fuel additive. Plastics additive. Wood preservative.

Uses advised against No information available.

Details of manufacturer or importer

Supplier
IXOM Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

Section 2: Hazard identification

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS). Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

GHS Classification

Flammable liquids	Category 4
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Specific target organ toxicity (single exposure)	Category 3

Label elements
Corrosion
Exclamation mark



Signal word
DANGER

Hazard statements
H227 - Combustible liquid
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear protective gloves/clothing and eye/face protection.
Do not breathe mist, vapours, spray.
Use only outdoors or in a well-ventilated area.
Do not eat, drink or smoke when using this product.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.
Precautionary Statements - Response
IF exposed:.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish..
Absorb spillage to prevent material damage.
Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Precautionary Statements - Disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Other hazards which do not result in classification

Section 3: Composition and information on ingredients

Chemical name	CAS No.	Weight-%
Monoethanolamine	141-43-5	>99

Section 4: First aid measures

Description of first aid measures

General advice For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. Give artificial respiration if victim is not breathing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Call a physician immediately.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Seek immediate medical attention/advice. Wash contaminated clothing before reuse.

Ingestion Rinse mouth thoroughly with water. Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Irritation/Corrosion. Erythema (skin redness). Burning. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically. No known specific antidote. Can cause corneal burns. Following inhalation of decomposition products in a fire, the patient should be kept under medical supervision for at least 48 hours.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media High volume water jet.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Sealed containers may rupture when heated. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Pay attention to flashback. Combustible liquid.

Hazardous combustion products Carbon monoxide (CO). Carbon dioxide (CO2). Nitrogen oxides.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters	Keep containers cool with water spray. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. If safe to do so, remove containers from path of fire.
Hazchem code	2X

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Remove all sources of ignition. Stop leak if you can do it without risk. Avoid contact with skin and eyes. Do not breathe vapor or mist. Ensure adequate ventilation. Wear protective gloves/clothing and eye/face protection. Use personal protective equipment as required. Wash thoroughly after handling. Wear appropriate respirator when ventilation is inadequate.
For emergency responders	Clear area of all unprotected personnel. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	Keep out of waterways.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).
Methods for cleaning up	Soak up with inert absorbent material. Dike to collect large liquid spills. Prevent product from entering drains. Use clean non-sparking tools to collect absorbed material. Work up wind or increase ventilation.

Section 7: Handling and storage

Precautions for safe handling

Advice on safe handling	Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use personal protection equipment. Wash thoroughly after handling. Do not reuse container. Ground and bond all lines and equipment associated with product system. All equipment should be non-sparking. All equipment may need to be explosion-proof based on a risk assessment.
General hygiene considerations	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing is recommended.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep at temperatures between 18°C and 38°C °C. Store locked up. Keep out of the reach of children. Store away from incompatible materials described in Section 10. Keep container closed when not in use. Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Packaging materials Do not store in aluminium, aluminium alloys, brass, copper, copper alloys, zinc, galvanized iron, carbon steel containers.

Incompatible materials Acids. Oxidizing agents. Iron. Copper. Rubber. Halogenated compounds. Brass.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

Chemical name	Australia	New Zealand	ACGIH TLV
Monoethanolamine 141-43-5	TWA: 3 ppm TWA: 7.5 mg/m^3 STEL: 6 ppm STEL: 15 mg/m^3	TWA: 3 ppm TWA: 7.5 mg/m^3 STEL: 6 ppm STEL: 15 mg/m^3	TWA: 3 ppm STEL: 6 ppm

Chemical name	European Union	United Kingdom	Germany DFG
Monoethanolamine 141-43-5	TWA: 1 ppm TWA: 2.5 mg/m^3 *	TWA: 1 ppm TWA: 2.5 mg/m^3 STEL: 3 ppm STEL: 7.6 mg/m^3 Sk*	TWA: 0.2 ppm TWA: 0.51 mg/m^3 Peak: 0.2 ppm Peak: 0.51 mg/m^3 skin sensitizer

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.



Eye/face protection	Tight sealing safety goggles. If splashes are likely to occur: Face protection shield.
Skin and body protection	Wear suitable protective clothing. Rubber boots. Overalls. Chemical resistant apron.
Hand protection	Elbow-length impervious gloves.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear an organic vapour/particulate respirator or an air supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. If determined by a risk assessment an inhalation risk exists, wear an organic vapour/particulate respirator or an air supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	No information available.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Viscous
Color	Colourless
Odor	Characteristic
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	12.1 (10% w/w)	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	10.3°C	None known
Boiling point / boiling range	170.8°C	None known
Flash point	86°C	CC (closed cup)
Evaporation rate	0.015 (butyl acetate=1)	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	17%	
Lower flammability or explosive limits	5.5%	
Vapor pressure	0.053 kPa (room temperature)	None known
Vapor density	2.1 (air=1)	None known
Relative density	1.02	None known
Water solubility	Miscible	None known
Solubility(ies)	No data available	None known
Partition coefficient	-1.31 (n-octanol/water)	None known
Autoignition temperature	410°C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	18.95 mPa·s (room temperature)	None known

Other information

Section 10: Stability and reactivity

Reactivity

Reactivity Hygroscopic: absorbs moisture or water from surrounding air.

Chemical stability

Stability Stable under normal conditions. Absorbs carbon dioxide from the air.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge May be ignited by heat, sparks or flames.

Possibility of hazardous reactions

Possibility of hazardous reactions May decompose on exposure to light. Heating above 60°C in the presence of aluminium can result in corrosion and generation of flammable hydrogen gas. Corrosive to copper, copper alloys, copper compounds.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Heat, flames and sparks. UV-radiation/sunlight. Static discharge (electrostatic discharge). Avoid exposure to air.

Incompatible materials

Incompatible materials Acids. Oxidizing agents. Iron. Copper. Rubber. Halogenated compounds. Brass.

Hazardous decomposition products

Hazardous decomposition products Carbon monoxide (CO). Carbon dioxide (CO_2). Nitrogen oxides. Ammonia.

Section 11: Toxicological information

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation Irritating to respiratory system. Harmful if inhaled.

Eye contact Causes serious eye damage.

Skin contact Causes severe burns. Harmful in contact with skin.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Can burn mouth, throat, and stomach. Harmful if swallowed.

Symptoms Irritation/Corrosion. Erythema (skin redness). Burning. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

Acute toxicity .

Numerical measures of toxicity - Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Monoethanolamine	= 1720 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	> 1.3 mg/L (Rat) 6 h

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization Not a skin sensitizer. (guinea pig).

Germ cell mutagenicity Not mutagenic in AMES Test.

Carcinogenicity Not listed as carcinogenic according to IARC.
(IARC - International Agency for Research on Cancer).

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Chronic effects: Available evidence from animal studies indicate that repeated or prolonged exposure to this material could result in effects on the liver and kidneys.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity Keep out of waterways.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Monoethanolamine	EC50: =15mg/L (72h, Desmodesmus subspicatus)	LC50: =227mg/L (96h, Pimephales promelas) LC50: =3684mg/L (96h, Brachydanio rerio) LC50: 300 - 1000mg/L (96h, Lepomis macrochirus) LC50: 114 - 196mg/L	-	EC50: =65mg/L (48h, Daphnia magna)

		(96h, Oncorhynchus mykiss) LC50: >200mg/L (96h, Oncorhynchus mykiss)		

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Persistence and degradability Readily biodegradable.

Bioaccumulative potential

Bioaccumulation This chemical shows a low bioaccumulation potential.

Component Information

Chemical name	Partition coefficient
Monoethanolamine	-1.31

Mobility

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Refer to Waste Management Authority. Dispose of material through a licensed waste contractor.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

See section 8 for more information

Section 14: Transport information

ADG Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number or ID number 2491
Proper shipping name ETHANOLAMINE
Transport hazard class(es) 8
Packing group III
Hazchem code 2X

IATA Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number 2491
UN proper shipping name ETHANOLAMINE

Transport hazard class(es)	8
Packing group	III

IMDG Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number	2491
UN proper shipping name	ETHANOLAMINE
Transport hazard class(es)	8
Packing group	III
IMDG EMS Fire	F-A
IMDG EMS Spill	S-B
Marine pollutant	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS). Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
Poison Schedule Number 6

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Monoethanolamine - 141-43-5	Present	-

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

National pollutant inventory
Subject to reporting requirement

Chemical name	National pollutant inventory
Monoethanolamine - 141-43-5	20 MW Threshold category 2b total 60000 MWH Threshold category 2b total 1 tonne/h Threshold category 2a total 25 tonne/yr Threshold category 1a total 400 tonne/yr Threshold category 2a total

	2000 tonne/yr Threshold category 2b total

International Inventories

AIIC	This material is listed on the Australian Inventory of Industrial Chemicals.
NZIoC	This material is listed on the New Zealand Inventory of Chemicals.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC- Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing Chemicals Inventory
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Other information

Supplier Safety Data Sheet 12/ 2020

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Prepared By This Safety Data Sheet has been prepared by IXOM Operations Pty Ltd (Toxicology and SDS Services).

Revision date: 07-Feb-2025

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend
SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity
ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Disclaimer
This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since IXOM Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their IXOM representative or IXOM Operations Pty Ltd at the contact details on page 1.

IXOM Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet

SAFETY DATA SHEET

MIL-LIME™

Version 3

Section 1. Identification

Product identifier : MIL-LIME™

Product code : 5025DF

ADG : -

Other means of identification : calcium hydroxide, lime

Product type : Solid.

Identified uses : Alkalinity Control

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :



GHS05 GHS07

Section 2. Hazard(s) identification

Signal word : DANGER

Hazard statements : H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves: > 8 hours (breakthrough time): Nitrile gloves. or Neoprene gloves.. Wear eye or face protection. Avoid breathing dust. Wash thoroughly after handling.

Response : IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : , P280, P261, P264, P304 + P312, P362 + P364, P302 + P352, P305 + P351 + P338, P310, P403 + P233, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Other means of identification : calcium hydroxide, lime

Ingredient name	% (w/w)	CAS number
calcium dihydroxide	60 - 100	1305-62-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Section 4. First aid measures

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Firefighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
calcium dihydroxide	**Safe Work Australia (Australia, 10/2022).** TWA: 5 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Nitrile gloves. or Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary Wear a respirator conforming to EN140 with type A/P2 filter or better.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Crystalline solid.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 12.4 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : 580°C

Boiling point, initial boiling point, and boiling range : 2850°C (5162°F)

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.2 to 2.4

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium dihydroxide	LD50 Oral	Rat	7340 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : May cause skin irritation.

Eyes : Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Respiratory : May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
MIL-LIME™	Category 3	-	Respiratory tract irritation
calcium dihydroxide	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Section 11. Toxicological information

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
calcium dihydroxide	Acute LC50 112.89 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Acute LC50 160 ppm Fresh water	Fish - *Gambusia affinis* - Adult	96 hours
	Acute LC50 457 mg/l Marine water	Fish - *Gasterosteus aculeatus*	96 hours
	Chronic LOEL 125 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEC 62.5 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

Section 15. Regulatory information

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 3

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2	Expert judgment
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3	Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Section 16. Any other relevant information

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

MILSTARCH™

Version 1

Section 1. Identification

Product identifier : MILSTARCH™

Product code : 1155DF

ADG : -

Product type : Powder.

Identified uses : Filtration Control Agent

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
Starch	60 - 100	9005-25-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 6. Accidental release measures

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Starch	**Safe Work Australia (Australia, 10/2022).** TWA: 10 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls and personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): nitrile or neoprene Gloves

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If necessary half-face mask and particulate filter

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : Off-white.

Odour : Not available.

Odour threshold : Not available.

pH : 5.6 to 8 [Conc. (% w/w): 10% - (H2O)]

Melting point/freezing point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: >125°C (>257°F)

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 0.55 to 0.7 (20°C)

Solubility(ies) :

Section 9. Physical and chemical properties and safety characteristics

Media	Result
cold water hot water	Easily soluble Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials and moisture.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Section 11. Toxicological information

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 2 May 2024.

Date of issue/Date of revision : 2 May 2024

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

Section 16. Any other relevant information

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

NOXYGEN™ L

Version 2

Section 1. Identification

Product identifier : NOXYGEN™ L

Product code : 1315DF

ADG : BISULFITES, AQUEOUS SOLUTION, N.O.S.

Product type : Liquid.

Identified uses : Oxygen scavenger.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

GHS label elements

Hazard pictograms :



GHS05 GHS07

Signal word : DANGER

Hazard statements : H302 - Harmful if swallowed.
H318 - Causes serious eye damage.

Section 2. Hazard(s) identification

Precautionary statements

Prevention : Wear eye or face protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : -, P280, P270, P264, P305 + P351 + P338, P310, -, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
ammonium hydrogensulphite	≥30 - ≤60	10192-30-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : nitrogen oxides,sulfur oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : 2W

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): PVC, neoprene or Rubber gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Clear.]

Colour : Yellow. [Light]

Odour : Pungent.

Odour threshold : Not available.

pH : 4.5 to 5.5

Melting point/freezing point : <0°C

Boiling point, initial boiling point, and boiling range : 105°C (221°F)

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not available.

Vapour pressure : 0.43 kPa (3.2 mm Hg)

Relative vapour density : Not available.

Relative density : 1.3 to 1.4 (20°C)

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Explosive in the presence of the following materials or conditions: oxidising materials.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Extremely reactive or incompatible with the following materials: oxidising materials, acids and alkalis.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : May be harmful if ingested. Can cause target organ damage.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : Risk of serious damage to eyes. May cause eye burns and permanent eye injury.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:,pain,watering,redness

Inhalation : No specific data.

Skin contact : pain or irritation,redness,blistering may occur

Ingestion : Adverse symptoms may include the following:,stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	UN2683	BISULFITES, AQUEOUS SOLUTION, N.O.S.(Contains: Ammonium bisulfite)	8	-	
ADG	UN2683	BISULFITES, AQUEOUS SOLUTION, N.O.S.	8	-	

Section 14. Transport information

IMDG	UN2693	BISULFITES, AQUEOUS SOLUTION, N.O.S.	8	III	
IATA	UN2693	BISULFITES, AQUEOUS SOLUTION, N.O.S.	8	III	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** 2W
ADG Class	No.	**Hazchem code** 2W
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 15. Regulatory information

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

SAPP

Version 6

Section 1. Identification

Product identifier : SAPP

Product code : 1364DF

ADG : -

Product type : Powder.

Identified uses : Dispersant

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :



GHS07

Signal word : WARNING

Hazard statements : H319 - Causes serious eye irritation.

Precautionary statements

Section 2. Hazard(s) identification

Prevention : Wear eye or face protection.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : Not applicable.

Precautionary statements (Code) : -, P280, P305 + P351 + P338, P337 + P313, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
disodium dihydrogenpyrophosphate	60 - 100	7758-16-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 4. First aid measures

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : phosphorus oxides,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

Section 8. Exposure controls and personal protection

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Nitrile gloves. Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Powder.]

Colour : White.

Odour : Faint odour.

Odour threshold : Not available.

Section 9. Physical and chemical properties and safety characteristics

pH : 4.5 [Conc. (% w/w): 1% - (H2O)]

Melting point/freezing point : >900°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 1.8

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : May cause eye irritation.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Section 14. Transport information

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 6

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container

Section 16. Any other relevant information

IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

OVA LUBE B

OVA CHEM

Part Number: **Not Available**
Version No: **2.3**
Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Issue Date: **29/03/2024**
Print Date: **29/03/2024**
L.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	OVA LUBE B
Synonyms	Not Available
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Lubricant

Details of the manufacturer or supplier of the safety data sheet

Registered company name	**OVA CHEM**
Address	2 Jalan Semenyih Intergrated 1, Semenyih Intergrated Industrial Park Semenyih 43500, Malaysia
Telephone	+0390541203
Fax	Not Available
Website	ovachem.com
Email	sales@ovachem.com

Emergency telephone number

Association / Organisation	**National Poison Centre**
Emergency telephone number(s)	**0390541203**
Other emergency telephone number(s)	**0390541203**

SECTION 2 Hazards identification

Classification of the substance or mixture

NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	Not Applicable
Classification [1]	Skin Corrosion/Irritation Category 2, Serious Eye Damage/ Eye Irritation Category 2
Legend:	***1. Classification by vendor; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI***

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

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Hazard statement(s)

H315	Causes skin irritation.
H318	Causes serious eye damage.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P261	Avoid breathing mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
56-81-5	40-50	glycerol
8002-43-5	20-30	lecithin
9065-63-8	20-40	butyl alcohol propoxylated

Legend:	***1. Classification by vendor; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available***

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area.

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	▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use water delivered as a fine spray to control fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). ▸ May emit acrid smoke. ▸ Mists containing combustible materials may be explosive. Combustion products include: carbon dioxide (CO_2) acrolein nitrogen oxides (NOx) phosphorus oxides (POx) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
HAZCHEM	Not Applicable

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Slippery when spilt. ▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite. ▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.
Major Spills	Chemical Class: alcohols and glycols

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For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS

LAND SPILL - SMALL

cross-linked polymer - particulate	1	shovel	shovel	R, W, SS
cross-linked polymer - pillow	1	throw	pitchfork	R, DGC, RT
sorbent clay - particulate	2	shovel	shovel	R,I, P
wood fiber - pillow	3	throw	pitchfork	R, P, DGC, RT
treated wood fiber - pillow	3	throw	pitchfork	DGC, RT
foamed glass - pillow	4	throw	pichfork	R, P, DGC, RT

LAND SPILL - MEDIUM

cross-linked polymer - particulate	1	blower	skiploader	R,W, SS
polypropylene - particulate	2	blower	skiploader	W, SS, DGC
sorbent clay - particulate	2	blower	skiploader	R, I, W, P, DGC
polypropylene - mat	3	throw	skiploader	DGC, RT
expanded mineral - particulate	3	blower	skiploader	R, I, W, P, DGC
polyurethane - mat	4	throw	skiploader	DGC, RT

Legend
DGC: Not effective where ground cover is dense
R; Not reusable
I: Not incinerable
P: Effectiveness reduced when rainy
RT:Not effective where terrain is rugged
SS: Not for use within environmentally sensitive sites
W: Effectiveness reduced when windy
Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;
R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988
Slippery when spilt.
Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT** eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
- **DO NOT** allow clothing wet with material to stay in contact with skin

Other information

- Store in original containers.

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	‣ Keep containers securely sealed. ‣ No smoking, naked lights or ignition sources. ‣ Store in a cool, dry, well-ventilated area. ‣ Store away from incompatible materials and foodstuff containers. ‣ Protect containers against physical damage and check regularly for leaks. ‣ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	‣ Metal can or drum ‣ Packaging as recommended by manufacturer. ‣ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Glycerol: ‣ reacts violently with strong oxidisers, acetic anhydride, alkali metal hydrides, calcium hypochlorite, calcium oxychloride, chlorine, chromic anhydride, chromium oxides, ethylene oxide, hydrogen peroxide, phosphorous triiodide, potassium chlorate, potassium permanganate, potassium peroxide, silver perchlorate, sodium hydride, sodium peroxide, sodium triiodide, sodium tetrahydroborate,is incompatible with strong acids, caustics, aliphatic amines, isocyanates, uranium fluoride ‣ is able to polymerise above 145 C ‣ Avoid reaction with oxidising agents



+	x	o	x	+	+	+

X — *Must not be stored together*
0 — *May be stored together with specific preventions*
\+ — *May be stored together*

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	glycerol	Glycerin mist	10 mg/m3	Not Available	Not Available	(a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

Ingredient	Original IDLH	Revised IDLH
glycerol	Not Available	Not Available
lecithin	Not Available	Not Available
butyl alcohol propoxylated	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
butyl alcohol propoxylated	C	> 1 to ≤ 10 parts per million (ppm)
Notes:	***Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.***	

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.
OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and

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- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Individual protection measures, such as personal protective equipment



Eye and face protection

- Safety glasses with side shields.
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

Hands/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
· frequency and duration of contact,

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	· chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below
Other protection	‣ Overalls. ‣ P.V.C apron. ‣ Barrier cream. ‣ Skin cleansing cream. ‣ Eye wash unit.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

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Information on basic physical and chemical properties

Appearance	Brown

Physical state	Liquid	**Relative density (Water = 1)**	1.01-1.026
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	-
pH (as supplied)	6 - 9	**Decomposition temperature (°C)**	-
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	<300
Initial boiling point and boiling range (°C)	210-305	**Molecular weight (g/mol)**	-
Flash point (°C)	>100	**Taste**	Not Available
Evaporation rate	-	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	-	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	-	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	-	**Gas group**	Not Available
Solubility in water	Miscible	**pH as a solution (1%)**	-
Vapour density (Air = 1)	-	**VOC g/L**	Not Available
Heat of Combustion (kJ/g)	Not Available	**Ignition Distance (cm)**	Not Available
Flame Height (cm)	Not Available	**Flame Duration (s)**	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	**Enclosed Space Ignition Deflagration Density (g/m3)**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. The material has **NOT** been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence. In the absence of such evidence, care should be taken nevertheless to ensure exposure is kept to a minimum and that suitable control measures be used, in an occupational setting to control vapours, fumes and aerosols.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
Skin Contact	The material may accentuate any pre-existing dermatitis condition

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	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. One of the mechanisms of skin irritation caused by surfactants is considered to be denaturation of the proteins of skin. It has also been established that there is a connection between the potential of surfactants to denature protein in vitro and their effect on the skin. Nonionic surfactants do not carry any net charge and, therefore, they can only form hydrophobic bonds with proteins. For this reason, proteins are not deactivated by nonionic surfactants, and proteins with poor solubility are not solubilized by nonionic surfactants Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. The material produces mild skin irritation; evidence exists, or practical experience predicts, that the material either ▸ produces mild inflammation of the skin in a substantial number of individuals following direct contact, and/or ▸ produces significant, but mild, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.
Eye	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation. Some nonionic surfactants may produce a localised anaesthetic effect on the cornea; this may effectively eliminate the warning discomfort produced by other substances and lead to corneal injury. Irritant effects range from minimal to severe dependent on the nature of the surfactant, its concentration and the duration of contact. Pain and corneal damage represent the most severe manifestation of irritation.
Chronic	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

OVA LUBE B	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
glycerol	**TOXICITY**	**IRRITATION**
	Dermal (Guinea Pig) LD50: 58500 mg/kg[1]	Eye (Rodent - rabbit): 500mg/24H - Mild
	Inhalation (Rat) LC50: >5.85 mg/L4h[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Mouse) LD50; 4090 mg/kg[2]	Skin (Rodent - rabbit): 500mg/24H - Mild
		Skin: no adverse effect observed (not irritating)[1]
lecithin	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
butyl alcohol propoxylated	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 13340 mg/kg[2]	Eye (Rodent - rabbit): 20mg/24H - Moderate
	Inhalation (Rat) LC50: 0.147 mg/L4h[2]	Eye (Rodent - rabbit): 500mg
	Oral (Rabbit) LD50; 1770 mg/kg[2]	Eye (Rodent - rabbit): 500mg
		Eye (Rodent - rabbit): 500mg/24H - Mild
		Eye (Rodent - rabbit): 500mg/24H - Mild
		Eye (Rodent - rabbit): 50mg - Severe
		Eye (Rodent - rabbit): 50mg - Severe
		Skin (Rodent - rabbit): 10mg/24H - Mild
		Skin (Rodent - rabbit): 500mg - Mild
		Skin (Rodent - rabbit): 500mg - Mild
		Skin (Rodent - rabbit): 500mg - Mild
		Skin (Rodent - rabbit): 500mg - Mild
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	Skin (Rodent - rabbit): 500mg - Mild
	Skin (Rodent - rabbit): 500mg/24H - Mild
	Skin (Rodent - rabbit): 500mg/24H - Mild
	Skin (Rodent - rabbit): 500mg/24H - Mild
	Skin (Rodent - rabbit): 80mg/4H
	Skin (Rodent - rabbit): 80mg/4H - Mild

Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

LECITHIN	No significant acute toxicological data identified in literature search.
BUTYL ALCOHOL PROPOXYLATED	In general, the toxicity of the PPGs Butyl Ether decreased with increasing molecular weight; for example, PPG-40 Butyl Ether was less toxic than PPG-2 Butyl Ether. Mutagenicity data were not found on the PPGs Butyl Ether. However, an ether of molecular weight 800 Da (~PPG-13 Butyl Ether) was non-carcinogenic when fed to rats for 2 years. Because the PPGs Butyl Ethers undergo metabolic degradation; i.e., the butyl group are removed and oxidized, the PPG chains are split into random length fragments, the genotoxicity of the component chemicals, propylene glycol (PG) and n- Butyl Alcohol, were also considered. Both PG and n-Butyl Alcohol were non-mutagenic in mammalian and microbial assays. PG was non-carcinogenic in a 2-year feeding study using rats and in a lifetime dermal study using mice. These studies effectively eliminated the need for genotoxicity data on the PPG Butyl Ethers. There was concern about the irritancy potential of PPG-2 Butyl Ether. In animal irritation studies, the ingredient caused minor, transient erythema and desquamation; in addition, erythema, edema, ecchymosis, necrosis, and other changes were observed during an acute percutaneous study. PPG-2 Butyl Ether also caused minor to moderate conjunctival irritation and minor corneal injury. It was concluded that the PPG Butyl Ethers were safe for use in cosmetics when formulated to avoid irritation. The dermal LD50 of PPG-3 Butyl Ether was 2 g/kg in rats and rabbits, and the dermal LD50 of Buteth-3 in rats was 3.5 g/kg. The oral LD50 of PPG-3 Butyl Ether and of Buteth-3 in rats was 2 g/kg and 6.6 g/kg, respectively. Polypropyleneglycol butyl ethers (not defined) had a dermal and an oral LD50 of 2 g/kg and 0.3-2 g/kg bw, respectively,in mice.Buteth-3 (1000 mg/kg/day) was not toxic to rabbits in a 21-day dermal study; erythema, desquamation,and fissuring were observed In short-term oral toxicity studies in rats, PPG-3 Butyl Ether had a NOAEL of 1000 mg/kg bw; polypropylene glycol butyl ethers had a NOEL of 100 mg/kg bw/day for clinical observations, higher absolute and relative liver weights, and an increased incidence of liver and thyroid gland hypertrophy; and 1-(2-butoxy-1-methylethoxy)propan-2-ol had a NOAEL of 100 mg/kg/day based on very slight to slight hepatocellular hypertrophy with no corresponding increases in liver weights in low-dose males. In a 90-day oral toxicity study, administration of up to 1000 mg/kg bw/day PPG-3 Butyl Ether to rats in drinking water produced treatment-related increases in absolute and relative liver and kidney weights. The NOAELs in rats and mice exposed to=3000 ppm methoxyisopropanol via inhalation for 2 yrs were 1000 ppm (based on slight body wt decreases in males and females) and 300 ppm (based on altered hepatocellular foci in males), respectively.Dermal application of propylene glycol butyl ether was not embryotoxic or teratogenic to rabbits (=100 mg/kg bw/day applied on days 7-18 of. gestation) or rats (=1.0 ml/kg bw/day applied on days 6-16 of gestation). 1-(2-Butoxy-1-methyl-ethoxy)propan-2-ol (applied on days 6-16 or 6-15 of gestation) also was not embryotoxic or teratogenic in rats. No test-article related adverse developmental or reproductive effects were observed in rats dosed by gavage with up to 1000 mg/kg Buteth-3 or 1-(2-butoxy-1-methylethoxy)propan-2-ol or up to 500 mg/kg bw/day polypropylene glycol butyl ethers. In inhalation studies, exposure of rats to =1.0 mg/l air PPG-3 Methyl Ether did not have any teratogenic or reproductive effects. Exposure to 1000 and 3000 ppm methoxyisopropanol produced some adverse effects in a two-generation study in rats; adverse effects were not observed with 300 ppm. PPG-3 Butyl Ether was not genotoxic in vitro in the Ames test or in vivo in a mouse micronucleus assay. Propylene glycol butyl ether was not genotoxic in an Ames test or a mammalian chromosomal aberration assay in rat lymphocytes, andneither propylene glycol butyl ether or 1-(2-butoxy-1-methylethoxy)propan-2-ol were genotoxic in a mammalian cellmutation assay in CHO cell. In inhalation carcinogenicity studies, mice and rats were exposed by whole body exposure to =3000 ppm methoxyisopropan-ol for 2 yrs. An increase in S-phase DNA synthesis and in MFO activity in the liver was observed in high-dose male mice and rats. Renal epithelial tumors were not observed, and the NOEL for carcinogenicity was 3000 ppm for mice and rats. Undiluted PPG-3 Butyl Ether was not irritating to rabbit skin or eyes, and it was not an irritant or sensitizer in guinea pigs. Polypropylene glycol butyl ethers were classified as non-corrosive in an EpiDermTM study Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air. Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture . On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their susceptibility towards autoxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose ACD to these compounds by patch testing. Allergic Contact Dermatitis—Formation, Structural Requirements,and Reactivity of Skin Sensitizers. Ann-Therese Karlberg et al; Chem. Res. Toxicol.2008,21,53-69 Polyethylene glycols (PEGs) have a wide variety of PEG-derived mixtures due to their readily linkable terminal primary hydroxyl groups in combination with many possible compounds and complexes such as ethers, fatty acids, castor oils, amines, propylene glycols, among other derivatives. PEGs and their derivatives are broadly utilized in cosmetic products as surfactants, emulsifiers, cleansing agents, humectants, and skin conditioners. PEGs and PEG derivatives were generally regulated as safe for use in cosmetics, with the conditions that impurities and by-products, such as ethylene oxides and 1,4-dioxane, which are known carcinogenic materials, should be removed before they are mixed in cosmetic formulations. Most PEGs are commonly available commercially as mixtures of different oligomer sizes in broadly- or narrowly-defined molecular weight (MW) ranges. For instance, PEG-10,000 typically designates a mixture of PEG molecules (n = 195 to 265)

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	having an average MW of 10,000. PEG is also known as polyethylene oxide (PEO) or polyoxyethylene (POE), with the three names being chemical synonyms. However, PEGs mainly refer to oligomers and polymers with molecular masses below 20,000 g/mol, while PEOs are polymers with molecular masses above 20,000 g/mol, and POEs are polymers of any molecular mass. Relatively small molecular weight PEGs are produced by the chemical reaction between ethylene oxide and water or ethylene glycol (or other ethylene glycol oligomers), as catalyzed by acidic or basic catalysts. To produce PEO or high-molecular weight PEGs, synthesis is performed by suspension polymerization. It is necessary to hold the growing polymer chain in solution during the course of the poly-condensation process. The reaction is catalyzed by magnesium-, aluminum-, or calcium-organoelement compounds. To prevent coagulation of polymer chains in the solution, chelating additives such as dimethylglyoxime are used Safety Evaluation of Polyethyene Glycol (PEG) Compounds for Cosmetic Use: Toxicol Res 2015; 31:105-136 The Korean Society of Toxicology https://doi.org/10.5487/TR.2015.31.2.105
OVA LUBE B & GLYCEROL	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production. For glycerol: **Acute toxicity:** Glycerol is of a low order of acute oral and dermal toxicity with LD50 values in excess of 4000 mg/kg bw. At very high dose levels, the signs of toxicity include tremor and hyperaemia of the gastro-intestinal -tract. Skin and eye irritation studies indicate that glycerol has low potential to irritate the skin and the eye. The available human and animal data, together with the very widespread potential for exposure and the absence of case reports of sensitisation, indicate that glycerol is not a skin sensitiser. **Repeat dose toxicity:** Repeated oral exposure to glycerol does not induce adverse effects other than local irritation of the gastro-intestinal tract. The overall NOEL after prolonged treatment with glycerol is 10,000 mg/kg bw/day (20% in diet). At this dose level no systemic or local effects were observed. For inhalation exposure to aerosols, the NOAEC for local irritant effects to the upper respiratory tract is 165 mg/m3 and 662 mg/m3 for systemic effects. **Genotoxicity:** Glycerol is free from structural alerts, which raise concern for mutagenicity. Glycerol does not induce gene mutations in bacterial strains, chromosomal effects in mammalian cells or primary DNA damage ***in vitro***. Results of a limited gene mutation test in mammalian cells were of uncertain biological relevance. ***In vivo***, glycerol produced no statistically significant effect in a chromosome aberrations and dominant lethal study. However, the limited details provided and the absence of a positive control, prevent any reliable conclusions to be drawn from the ***in vivo*** data. Overall, glycerol is not considered to possess genotoxic potential. **Carcinogenicity:** The experimental data from a limited 2 year dietary study in the rat does not provide any basis for concerns in relation to carcinogenicity. Data from non-guideline studies designed to investigate tumour promotion activity in male mice suggest that oral administration of glycerol up to 20 weeks had a weak promotion effect on the incidence of tumour formation. **Reproductive and developmental toxicity:** No effects on fertility and reproductive performance were observed in a two generation study with glycerol administered by gavage (NOAEL 2000 mg/kg bw/day). No maternal toxicity or teratogenic effects were seen in the rat, mouse or rabbit at the highest dose levels tested in a guideline comparable teratogenicity study (NOEL 1180 mg/kg bw/day).
OVA LUBE B & BUTYL ALCOHOL PROPOXYLATED	Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products . Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response. Moreover, no fatal case of poisoning with alcohol ethoxylates has ever been reported. Multiple studies investigating the acute toxicity of alcohol ethoxylates have shown that the use of these compounds is of low concern in terms of oral and dermal toxicity . Clinical animal studies indicate these chemicals may produce gastrointestinal irritation such as ulcerations of the stomach, pilo-erection, diarrhea, and lethargy. Similarly, slight to severe irritation of the skin or eye was generated when undiluted alcohol ethoxylates were applied to the skin and eyes of rabbits and rats. The chemical shows no indication of being a genotoxin, carcinogen, or mutagen (HERA 2007). No information was available on levels at which these effects might occur, though toxicity is thought to be substantially lower than that of nonylphenol ethoxylates. Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air. Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture . On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However,their susceptibility towards autoxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose allergic contact dermatitis (ACD) to these compounds by patch testing Overall, alcohol alkoxylates (AAs) are not expected to be systemically toxic, although some short chain ethylene glycol ethers, e.g. methyl and ethyl homologues are of concern for a range of adverse health effects. They include skin and eye irritation, liver and kidney damage, bone marrow and central nervous system (CNS) depression, testicular atrophy, developmental toxicity, and immunotoxicity. For higher propyl and butyl homologues, the toxicity involves haemolysis (anaemia) with secondary effects relating to haemosiderin accumulation in the spleen, liver and kidney, and compensatory haematopoiesis in the bone marrow. Systemic toxicity was shown to decrease with increasing alkyl chain lengths and/or alkoxylation degrees (ECETOC, 2005; US EPA, 2010). The chemicals ethylene glycol hexyl ether (with a longer alkyl chain length, CAS No. 112-25-4) and diethylene glycol butyl ether (with a higher ethoxylation degree, CAS No. 112-34-5) have no evidence of systemic effects including haemolysis. Commercially available AAs are mixtures of homologues of varying carbon chain lengths and it is possible that some of the

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chemicals with an average alkyl chain length C >=6 may also contain shorter alkyl chains C <6. It is not practical to quantify the proportion of shorter C <6 chain lengths present in such chemicals, or these shorter chain lengths may not be present at all. The available data suggest a lack of systemic toxicity for the AE chemicals with potential short alkyl chain presence (NICNASa); therefore, the toxicity of the chemicals in this assessment is unlikely to be significantly affected by the presence of shorter chain alkyl groups.
Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units:
EO < 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes)
EO > 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41
EO > 15-20 gives Harmful (Xn) with R22-41
>20 EO is not classified (CESIO 2000)
Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin) .
AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC

In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO2).Orally dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). Half of the absorbed surfactant was excreted promptly in the urine and smaller amounts of AE appeared in the faeces and expired air (CO2)). The metabolism of C12 AE yields PEG, carboxylic acids, and CO2 as metabolites. The LD50 values after oral administration to rats range from about 1-15 g/kg body weight indicating a low to moderate acute toxicity.

The ability of nonionic surfactants to cause a swelling of the stratum corneum of guinea pig skin has been studied. The swelling mechanism of the skin involves a combination of ionic binding of the hydrophilic group as well as hydrophobic interactions of the alkyl chain with the substrate. One of the mechanisms of skin irritation caused by surfactants is considered to be denaturation of the proteins of skin. It has also been established that there is a connection between the potential of surfactants to denature protein in vitro and their effect on the skin. Nonionic surfactants do not carry any net charge and, therefore, they can only form hydrophobic bonds with proteins. For this reason, proteins are not deactivated by nonionic surfactants, and proteins with poor solubility are not solubilized by nonionic surfactants. A substantial amount of toxicological data and information in vivo and in vitro demonstrates that there is no evidence for alcohol ethoxylates (AEs) being genotoxic, mutagenic or carcinogenic. No adverse reproductive or developmental effects were observed. The majority of available toxicity studies revealed NOAELs in excess of 100 mg/kg bw/d but the lowest NOAEL for an individual AE was established to be 50 mg/kg bw/day. This value was subsequently considered as a conservative, representative value in the risk assessment of AE. The effects were restricted to changes in organ weights with no histopathological organ changes with the exception of liver hypertrophy (indicative of an adaptive response to metabolism rather than a toxic effect). It is noteworthy that there was practically no difference in the NOAEL in oral studies of 90-day or 2 years of duration in rats. A comparison of the aggregate consumer exposure and the systemic NOAEL (taking into account an oral absorption value of 75%) results in a Margin of Exposure of 5,800. Taking into account the conservatism in the exposure assessment and the assigned systemic NOAEL, this margin of exposure is considered more than adequate to account for the inherent uncertainty and variability of the hazard database and inter and intra-species extrapolations.

AEs are not contact sensitisers. Neat AE are irritating to eyes and skin. The irritation potential of aqueous solutions of AEs depends on concentrations. Local dermal effects due to direct or indirect skin contact in certain use scenarios where the products are diluted are not of concern as AEs are not expected to be irritating to the skin at in-use concentrations. Potential irritation of the respiratory tract is not a concern given the very low levels of airborne AE generated as a consequence of spray cleaner aerosols or laundry powder detergent dust.

In summary, the human health risk assessment has demonstrated that the use of AE in household laundry and cleaning detergents is safe and does not cause concern with regard to consumer use.
For high boiling ethylene glycol ethers (typically triethylene- and tetraethylene glycol ethers):
Skin absorption: Available skin absorption data for triethylene glycol ether (TGBE), triethylene glycol methyl ether (TGME), and triethylene glycol ethylene ether (TGEE) suggest that the rate of absorption in skin of these three glycol ethers is 22 to 34 micrograms/cm2/hr, with the methyl ether having the highest permeation constant and the butyl ether having the lowest. The rates of absorption of TGBE, TGEE and TGME are at least 100-fold less than EGME, EGEE, and EGBE, their ethylene glycol monoalkyl ether counterparts, which have absorption rates that range from 214 to 2890 micrograms/ cm2/hr . Therefore, an increase in either the chain length of the alkyl substituent or the number of ethylene glycol moieties appears to lead to a decreased rate of percutaneous absorption. However, since the ratio of the change in values of the ethylene glycol to the diethylene glycol series is larger than that
of the diethylene glycol to triethylene glycol series , the effect of the length of the chain and number of ethylene glycol moieties on absorption diminishes with an increased number of ethylene glycol moieties. Therefore, although tetraethylene glycol methyl; ether (TetraME) and tetraethylene glycol butyl ether (TetraBE) are expected to be less permeable to skin than TGME and TGBE, the differences in permeation between these molecules may only be slight.
Metabolism: The main metabolic pathway for metabolism of ethylene glycol monoalkyl ethers (EGME, EGEE, and EGBE) is oxidation via alcohol and aldehyde dehydrogenases (ALD/ADH) that leads to the formation of an alkoxy acids. Alkoxy acids are the only toxicologically significant metabolites of glycol ethers that have been detected ***in vivo.*** The principal metabolite of TGME is believed to be 2-[2-(2-methoxyethoxy)ethoxy] acetic acid . Although ethylene glycol, a known kidney toxicant, has been identified as an impurity or a minor metabolite of glycol ethers in animal studies it does not appear to contribute to the toxicity of glycol ethers.
The metabolites of category members are not likely to be metabolized to any large extent to toxic molecules such as ethylene glycol or the mono alkoxy acids because metabolic breakdown of the ether linkages also has to occur
Acute toxicity: Category members generally display low acute toxicity by the oral, inhalation and dermal routes of exposure. Signs of toxicity in animals receiving lethal oral doses of TGBE included loss of righting reflex and flaccid muscle tone, coma, and heavy breathing. Animals administered lethal oral doses of TGEE exhibited lethargy, ataxia, blood in the urogenital area and piloerection before death.
Irritation: The data indicate that the glycol ethers may cause mild to moderate skin irritation. TGEE and TGBE are highly irritating to the eyes. Other category members show low eye irritation.
Repeat dose toxicity: Results of these studies suggest that repeated exposure to moderate to high doses of the glycol ethers in this category is required to produce systemic toxicity

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In a 21-day dermal study, TGME, TGEE, and TGBE were administered to rabbits at 1,000 mg/kg/day. Erythema and oedema were observed. In addition, testicular degeneration (scored as trace in severity) was observed in one rabbit given TGEE and one rabbit given TGME. Testicular effects included spermatid giant cells, focal tubular hypospermatogenesis, and increased cytoplasmic vacuolisation . Due to a high incidence of similar spontaneous changes
in normal New Zealand White rabbits , the testicular effects were considered not to be related to treatment . Thus, the NOAELs for TGME, TGEE and TGBE were established at 1000 mg/kg/day. Findings from this report were considered unremarkable.
A 2-week dermal study was conducted in rats administered TGME at doses of 1,000, 2,500, and 4,000 mg/kg/day . In this study, significantly-increased red blood cells at 4,000 mg/kg/day and significantly-increased urea concentrations in the urine at 2,500 mg/kg/day were observed. A few of the rats given 2,500 or 4,000 mg/kg/day had watery caecal contents and/or haemolysed blood in the stomach These gross pathologic observations were not associated with any histologic abnormalities in these tissues or alterations in haematologic and clinical chemistry parameters. A few males and females treated with either 1,000 or 2,500 mg/kg/day had a few small scabs or crusts at the test site. These alterations were slight in degree and did not adversely affect the rats
In a 13-week drinking water study, TGME was administered to rats at doses of 400, 1,200, and 4,000 mg/kg/day. Statistically-significant changes in relative liver weight were observed at 1,200 mg/kg/day and higher. Histopathological effects included hepatocellular cytoplasmic vacuolisation (minimal to mild in most animals) and hypertrophy (minimal to mild) in males at all doses and hepatocellular hypertrophy (minimal to mild) in high dose females. These effects were statistically significant at 4,000 mg/kg/day. Cholangiofibrosis was observed in 7/15 high-dose males; this effect was observed in a small number of bile ducts and was of mild severity. Significant, small decreases in total test session motor activity were observed in the high-dose animals, but no other neurological effects were observed. The changes in motor activity were secondary to systemic toxicity
Mutagenicity: Mutagenicity studies have been conducted for several category members. All in vitro and in vivo studies were negative at concentrations up to 5,000 micrograms/plate and 5,000 mg/kg, respectively, indicating that the category members are not genotoxic at the concentrations used in these studies. The uniformly negative outcomes of various mutagenicity studies performed on category members lessen the concern for carcinogenicity.
Reproductive toxicity: Although mating studies with either the category members or surrogates have not been performed, several of the repeated dose toxicity tests with the surrogates have included examination of reproductive organs. A lower molecular weight glycol ether, ethylene glycol methyl ether (EGME), has been shown to be a testicular toxicant. In addition, results of repeated dose toxicity tests with TGME clearly show testicular toxicity at an oral dose of 4,000 mg/kg/day four times greater that the limit dose of 1,000 mg/kg/day recommended for repeat dose studies. It should be noted that TGME is 350 times less potent for testicular effects than EGME. TGBE is not associated with testicular toxicity, TetraME is not likely to be metabolised by any large extent to 2-MAA (the toxic metabolite of EGME), and a mixture containing predominantly methylated glycol ethers in the C5-C11 range does not produce testicular toxicity (even when administered intravenously at 1,000 mg/kg/day).
Developmental toxicity: The bulk of the evidence shows that effects on the foetus are not noted in treatments with . 1,000 mg/kg/day during gestation. At 1,250 to 1,650 mg/kg/day TGME (in the rat) and 1,500 mg/kg/day (in the rabbit), the developmental effects observed included skeletal variants and decreased body weight gain.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✓
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ ***– Data either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

SECTION 12 Ecological information

Toxicity

OVA LUBE B

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

glycerol

Endpoint	Test Duration (hr)	Species	Value	Source
EC0(ECx)	24h	Crustacea	>500mg/l	1
LC50	96h	Fish	>11mg/L	2

lecithin

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

butyl alcohol propoxylated

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	96h	Algae or other aquatic plants	744.74mg/l	2
EC50	72h	Algae or other aquatic plants	>500mg/l	1
NOEC(ECx)	72h	Algae or other aquatic plants	62.5mg/l	2
EC50	48h	Crustacea	>500mg/l	1

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	LC50	96h	Fish	1350mg/l	1
	EC50	96h	Algae or other aquatic plants	315mg/l	2
	EC50	72h	Algae or other aquatic plants	445mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	NOEC(ECx)	96h	Algae or other aquatic plants	<15.9mg/l	2
	LC50	96h	Fish	564mg/l	2
	LC50	96h	Fish	48-52mg/L	4
	EC50	48h	Crustacea	89-101mg/L	4
	EC50(ECx)	48h	Crustacea	89-101mg/L	4
Legend:	***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data***				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
For glycerol
log Kow : -2.66- -2.47
BOD 5: 0.617-0.87,31-51%
COD : 1.16,82-95%
ThOD : 1.217-1.56
Completely biodegradable.
Environmental fate:
Based on the relevant physical-chemical properties and the fact that glycerol is readily biodegradable, glycerol will partition primarily to water.
Biodegradability: Glycerol is considered to be readily biodegradable in the aquatic environment. Pre-adapted microorganisms can degrade glycerol rapidly under both aerobic and anaerobic conditions.
Bioaccumulation: Based on Log Kow -1.76, glycerol will have a low bioaccumulation potential and is not expected to bioaccumulate.
Photodegradation: The calculated half-life for the photo-oxidation (reaction with hydroxyl radicals) of glycerol in air is 6.8 hours (EPIWIN vs 3.04).
Stability in Water: Glycerol does not contain functional groups that are expected to react with water.
Transport between Environmental Compartments: From the EQC model (Mackay level III), it can be deduced that 100% of glycerol will end up in the water phase. Negligible amounts will be distributed towards soil, air and sediment
Ecotoxicity:
Fish LC50: >5000 mg/l
Algae IC50: >2900 mg/l
Bacteria EC50: .10000 mg/l (Pseudomonas putida)
The weight of evidence indicates that glycerol is of low toxicity to aquatic organisms and this conclusion is supported by QSAR predictions. The lowest LC50 for fish is a 24-h LC50 of >5000 mg/l for Carassius auratus (Goldfish) and for aquatic invertebrates, a 24 h EC50 of >10000 mg/l for Daphnia magna is the lowest EC50. Several tests on algae are available, which suggest very low toxicity to a range of species, however their validity is uncertain. A QSAR prediction for the 96h EC50 to algae was 78000 mg/l. No toxicity towards the microorganism Pseudomonas putida was observed at 10000 mg/l after exposure for 16 hours. No long-term aquatic toxicity data is available. Screening studies are available on frog and carp embryos which indicate some effects on growth and hatching rates respectively at very high concentrations of glycerol, >7000 mg/l. However, their ecological relevance is not clear.

for alcohol ethoxylates
Environmental fate:
Alcohol (alkyl) ethoxylates (AEs) are generally biodegradable and do not persist for any substantial period in the environment. They are not usually present a concentrations which might produce problems. Contamination of natural waters, however, should be avoided.
The biodegradability of the alcohol ethoxylates (AE) is relatively unaffected by the alkyl carbon chain length and the number of EO units. The linear AE are normally easily degraded under aerobic conditions. Only small differences are seen in the time needed for ultimate degradation of linear AE with different alkyl chain lengths. AE with a typical alkyl chain (e.g., C12 to C15) will normally reach more than 60% degradation in standardized tests for "ready" biodegradability.
The rate of biodegradation may however be determined by the length of the ethylene oxide (EO) chain. Longer EO chains decrease the bioavailability of the AE (to microorganism) due to increased hydrophilicity and molecular size, which limits the transport of the molecule through the cell wall. The biodegradation of branched AE tends to be slower than biodegradation of linear AE. The biodegradability of AE depends on degree and structure of the branching. The general trend is that the biodegradation decreases considerably with an increasing branching of the carbon chain. The biodegradability of alcohol alkoxylates (AA), similarly, generally decreases with an increasing number of PO units. AA containing 6 PO units did not pass the level required for ready biodegradability whereas the same alcohol containing 2 PO units attained 83% ThOD in the closed bottle test.
The mineralization observed in experiments with 14C-labelled surfactants suggests that almost complete degradation of linear AE may be expected in anaerobic digesters.
Ecotoxicity:
Available information suggests that alcohol ethoxylates can have acute and chronic toxic effects on aquatic organisms. These effects vary by carbon chain length. Typical alcohol ethoxylate surfactant chain length ranges from 9 to 18 carbons and 3 to 8 ethoxylate groups. Toxicity generally declines as the number of ethoxylates increases
A summary of chronic toxicity data from 60 studies conducted between 1977 and 2004 on fish, aquatic invertebrates, and aquatic plant and algae species states that alcohol ethoxylates effects on aquatic species include reduced growth rates, impaired reproduction, and reduced survival of neonates, as well as acute mortality. Alcohol ethoxylates may cause diminished growth rates and reduced cell counts in algae species at concentrations as low as 0.03 mg/L .
The concentrations at which alcohol ethoxylates lead to acute mortality in aquatic species are similar to the concentrations at which nonylphenol ethoxylates lead to acute mortality. However, alcohol ethoxylates degrade more quickly in the aquatic environment to relatively non-toxic compounds, whereas nonylphenol ethoxylate degradation typically yields nonylphenol, which is toxic as well as persistent in the aquatic environment
Algae constitute the group of aquatic organisms which appears to be the most sensitive to AE. The acute toxicity of linear and branched AE to algae is in the same range with EC50 values from 0.05 to 50 mg/l. For the linear AE, the toxicity increases with increasing hydrophobe chain length of C13) and decreasing EO chain

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length. The toxicity of AE to algae tends to decrease with increasing degree of branching.
The acute toxicity of AE to invertebrates varies with EC50 values from 0.1 mg/l to more than 100 mg/l for the linear types and from 0.5 mg/l to 50 mg/l for the branched types. The toxicity is species specific and may vary between 0.29 mg/l to 270 mg/l for the same linear AE The most commonly used invertebrates for testing are Daphnia magna and Daphnia pulex, and they are also among the most sensitive invertebrates to AE. Apparently, the toxicity of AE to invertebrates was not related to hydrophobicity as it is the case for algae. Some AE are very toxic to invertebrates, i.e., linear AE of C12-15 EO1-8 and branched AE with a low degree of branching, i.e. < 10-25%. Branching of the alkyl chain reduces the toxicity of AE to invertebrates as also observed for algae.
The acute toxicity of AE to fish varies with LC50 values from 0.4 mg/l to more than 100 mg/l for the linear types and from 0.25 mg/l to 40 mg/l for the branched AE. For linear AE the toxicity increases with decreasing EO units. AE containing 7-11 EO groups are considered to be very toxic to fish (EC/LC50: 1 mg/l).
Of special interest are the aryl alcohol ethoxylates.
A EU Risk Assessment Report (RAR) concluded that octyl- and nonyl- phenol ethoxylates are not readily biodegradable but are inherently biodegradable.
As a group, these materials are generally toxic to fish with LC50s ranging, typically, between 1-6 mg/l.
Of special concern are the following families which are classified as "Environmentally Hazardous Substances" (Dangerous Goods Class 9) by either or both the ADR (Accord Europeen Relatif au Transport International des Merchandises Dangerous par Route) and the IMDG Code (International Maritime Dangerous Goods Code).
alcohols C 6-17 (secondary) with 3-6 moles of ethoxylation.
alcohols C12-15 with 1-3 moles of ethoxylation (1-6 moles of ethoxylation IMDG)
alcohols C13-15 with 1-6 moles of ethoxylation.
New aquatic data suggests that alcohols C 8-9 branched with 3-10 moles of ethoxylation alcohols C 8-9 branched with > 10 moles of ethoxylation should also be classified as 'harmful to the environment".
These alcohols may also be found linked to aromatic structures (in nonylphenol ethoxylates for example). The current consensus determines that such entities become Environmental Toxins by association.
For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350.
Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases.
Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids. Cationic surfactants are strongly sorbed by solids, particularly clays. Significant sorption of anionic and non-ionic surfactants has been observed in activated sludge and organic river sediments. Surfactants have been shown to improve water infiltration into soils with moderate to severe hydrophobic or water-repellent properties.
Ecotoxicity: Some surfactants are known to be toxic to animals, ecosystems and humans, and can increase the diffusion of other environmental contaminants. The acute aquatic toxicity generally is considered to be related to the effects of the surfactant properties on the organism and not to direct chemical toxicity. Surfactants should be considered to be toxic to aquatic species under conditions that allow contact of the chemicals with the organisms. Surfactants are expected to transfer slowly from water into the flesh of fish. During this process, readily biodegradable surfactants are expected to be metabolized rapidly during the process of bioaccumulation. Surfactants are not to be considered to show bioaccumulation potential if they are readily biodegradable.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
glycerol	LOW	LOW
butyl alcohol propoxylated	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
glycerol	LOW (LogKOW = -1.76)
lecithin	LOW (LogKOW = 13.41)
butyl alcohol propoxylated	LOW (LogKOW = 1.2706)

Mobility in soil

Ingredient	Mobility
glycerol	HIGH (Log KOC = 1)
butyl alcohol propoxylated	LOW (Log KOC = 10)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority.

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	▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
glycerol	Not Available
lecithin	Not Available
butyl alcohol propoxylated	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
glycerol	Not Available
lecithin	Not Available
butyl alcohol propoxylated	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

glycerol is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

lecithin is found on the following regulatory lists

Australia Industrial Chemicals Introduction Scheme Comparable Chemicals Table
Australian Inventory of Industrial Chemicals (AIIC)

butyl alcohol propoxylated is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)

Additional Regulatory Information

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (glycerol; lecithin; butyl alcohol propoxylated)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (lecithin)

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National Inventory	Status
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 Other information

Revision Date	29/03/2024
Initial Date	29/03/2024

Other information

Ingredients with multiple cas numbers

Name	CAS No
glycerol	56-81-5, 29796-42-7, 30049-52-6, 37228-54-9, 75398-78-6, 78630-16-7, 8013-25-0, 8043-29-6, 1400594-62-8
lecithin	8002-43-5, 112099-03-3, 117742-89-9, 160936-32-3, 8035-17-4, 8052-43-5, 8057-53-2, 55128-59-1, 252035-82-8, 8030-76-0, 8038-96-8, 93685-90-6, 97281-44-2
butyl alcohol propoxylated	9065-63-8, 1033553-65-9, 9038-95-3, 9003-13-8, 55934-93-5, 143-22-6

Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances

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- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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OVA LUBE PLUS

OVA CHEM

Part Number: **Not Available**
Version No: **1.3**
Safety Data Sheet according to CLASS requirements 2013

Issue Date: **29/03/2024**
Print Date: **29/03/2024**
L.GHS.MYS.EN

SECTION 1: Identification of the hazardous chemical and of the supplier

Product Identifier

Product name	OVA LUBE PLUS
Synonyms	Not Available
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Not Available

Details of the manufacturer or supplier of the safety data sheet

Registered company name	**OVA CHEM**
Address	2, Jalan Semenyih Integrated 1, Semenyih Integrated Industrial Park Semenyih 43500 Malaysia
Telephone	+60390541203
Fax	Not Available
Website	www.ovachem.com
Email	Not Available

Emergency telephone number

Association / Organisation	**National Poison Centre**
Emergency telephone numbers	**+60 4657 0099**
Other emergency telephone numbers	**Not Available**

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification [1]	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2
Legend:	*1. Classification by vendor; 2. Classification drawn from ICOP; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.

Precautionary statement(s) Prevention

P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P362	Take off contaminated clothing and wash before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P332+P313	If skin irritation occurs: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
8002-33-3	80-90	sulfonated castor oil
9005-64-5	10-20	sorbitan monolaurate, ethoxylated

Legend:	*1. Classification by vendor; 2. Classification drawn from ICOP; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available*

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.

- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use water delivered as a fine spray to control fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). ▸ May emit acrid smoke. ▸ Mists containing combustible materials may be explosive. Combustion products include: carbon dioxide (CO_2) sulfur oxides (SOx) other pyrolysis products typical of burning organic material. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite.
Major Spills	▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS

LAND SPILL - SMALL

cross-linked polymer - particulate	1	shovel	shovel	R, W, SS
cross-linked polymer - pillow	1	throw	pitchfork	R, DGC, RT
sorbent clay - particulate	2	shovel	shovel	R,I, P
wood fiber - pillow	3	throw	pitchfork	R, P, DGC, RT
treated wood fiber - pillow	3	throw	pitchfork	DGC, RT
foamed glass - pillow	4	throw	pichfork	R, P, DGC, RT

LAND SPILL - MEDIUM

cross-linked polymer - particulate	1	blower	skiploader	R,W, SS
polypropylene - particulate	2	blower	skiploader	W, SS, DGC

sorbent clay - particulate	2	blower	skiploader	R, I, W, P, DGC
polypropylene - mat	3	throw	skiploader	DGC, RT
expanded mineral - particulate	3	blower	skiploader	R, I, W, P, DGC
polyurethane - mat	4	throw	skiploader	DGC, RT

Legend
DGC: Not effective where ground cover is dense
R; Not reusable
I: Not incinerable
P: Effectiveness reduced when rainy
RT:Not effective where terrain is rugged
SS: Not for use within environmentally sensitive sites
W: Effectiveness reduced when windy
Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;
R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988
Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- Overheating of ethoxylates/ alkoxylates in air should be avoided. When some ethoxylates are heated vigorously in the presence of air or oxygen, at temperatures exceeding 160 C, they may undergo exothermic oxidative degeneration resulting in self-heating and autoignition.
- Nitrogen blanketing will minimise the potential for ethoxylate oxidation. Prolonged storage in the presence of air or oxygen may cause product degradation. Oxidation is not expected when stored under a nitrogen atmosphere. Inert gas blanket and breathing system needed to maintain color stability. Use dry inert gas having at least -40 C dew point.
- Trace quantities of ethylene oxide may be present in the material. Although these may accumulate in the headspace of storage and transport vessels, concentrations are not expected to exceed levels which might produce a flammability or worker exposure hazard.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT** eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
- **DO NOT** allow clothing wet with material to stay in contact with skin

Other information	Ethoxylates/ alkoxylates react slowly with air or oxygen and may generate potentially sensitising intermediates (haptens).. Storage under heated conditions in the presence of air or oxygen increases reaction rate. For example, after storing at 95 F/ 35 C for 30 days in the presence of air, there is measurable oxidation of the ethoxylate. Lower temperatures will allow for longer storage time and higher temperatures will shorten the storage time if stored under an air or oxygen atmosphere. ▸ Store in original containers. ▸ Keep containers securely sealed. ▸ No smoking, naked lights or ignition sources. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	For ethoxylates suitable containers include carbon steel coated with baked phenolic. Any moisture may cause rusting of carbon steel. If product is moisture free, uncoated carbon steel tanks may be used. ▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▸ Overheating of ethoxylates/ alkoxylates in air should be avoided. When some ethoxylates are heated vigorously in the presence of air or oxygen, at temperatures exceeding 160 C, they may undergo exothermic oxidative degeneration resulting in self-heating and autoignition. ▸ Nitrogen blanketing will minimise the potential for ethoxylate oxidation. Prolonged storage in the presence of air or oxygen may cause product degradation. Oxidation is not expected when stored under a nitrogen atmosphere. Inert gas blanket and breathing system needed to maintain color stability. Use dry inert gas having at least -40 C dew point. ▸ Trace quantities of ethylene oxide may be present in the material. Although these may accumulate in the headspace of storage and transport vessels, concentrations are not expected to exceed levels which might produce a flammability or worker exposure hazard. ▸ Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.



X — *Must not be stored together*
0 — *May be stored together with specific preventions*
+ — *May be stored together*

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
OVA LUBE PLUS	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
sulfonated castor oil	Not Available	Not Available
sorbitan monolaurate, ethoxylated	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
sulfonated castor oil	E	≤ 0.1 ppm
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for

these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.
OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Individual protection measures, such as personal protective equipment



Eye and face protection

- Safety glasses with side shields.
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream. ▸ Eye wash unit.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	A-AUS / Class1 P2	-
up to 50	1000	-	A-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 P2
up to 100	10000	-	A-3 P2
100+			Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Brown

Physical state	Liquid	**Relative density (Water = 1)**	1.010-1.025
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	>185	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	Nonionic surfactants may produce localised irritation of the oral or gastrointestinal mucosa and induce vomiting and mild diarrhoea. The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

Skin Contact	Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing dermatitis condition Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. One of the mechanisms of skin irritation caused by surfactants is considered to be denaturation of the proteins of skin. It has also been established that there is a connection between the potential of surfactants to denature protein in vitro and their effect on the skin. Nonionic surfactants do not carry any net charge and, therefore, they can only form hydrophobic bonds with proteins. For this reason, proteins are not deactivated by nonionic surfactants, and proteins with poor solubility are not solubilized by nonionic surfactants Irritation and skin reactions are possible with sensitive skin
Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. Some nonionic surfactants may produce a localised anaesthetic effect on the cornea; this may effectively eliminate the warning discomfort produced by other substances and lead to corneal injury. Irritant effects range from minimal to severe dependent on the nature of the surfactant, its concentration and the duration of contact. Pain and corneal damage represent the most severe manifestation of irritation.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

OVA LUBE PLUS	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
sulfonated castor oil	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: 10000 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]
sorbitan monolaurate, ethoxylated	**TOXICITY**	**IRRITATION**
	dermal (guinea pig) LD50: >3000 mg/kg[1]	Skin (human): 15 mg/3d mild
	Inhalation (Rat) LC50: >5.1 mg/l4h[1]	
	Oral (Mouse) LD50; >33000 mg/kg[2]	
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

SULFONATED CASTOR OIL	No significant acute toxicological data identified in literature search.
SORBITAN MONOLAURATE, ETHOXYLATED	For sorbitan esters, ethoxylated (syn: polyoxyethylene sorbitan esters): Some of the early short-term studies with these polyoxyethylene sorbitan esters in rats and hamsters showed deleterious effects. Subsequent work suggests that these were largely due to diarrhoea resulting from a large amount of unabsorbed polyglycol, possibly aggravated in some experiments by the use of an unsuitable basal diet. Since that time there has been considerable improvement in testing procedures,and more extensive long-term studies have been carried out. It seems reasonable therefore to base the evaluation of these substances on the levels causing no adverse effects indicated by the results of the more recent investigations. The significance of the local tumours which were produced by injection has been discussed at the meeting of the Scientific Group (1966). No increase in tumour incidence has followed the oral intake of polyoxyethylene sorbitan esters. Furthermore, large doses of the oleate and stearate have been well tolerated by human subjects. Polyoxyethylene (20) sorbitan monoester of lauric, oleic, palmitic and stearic acid and triester of stearic acid Seventeenth Report of the Joint FAO/WHO Expert Committee on Food Additives, Wld Hlth Org. Techn. Rep. Ser., 1974, No. 539; FAO Nutrition Meetings Report Series, 1974, No. 53. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

OVA LUBE PLUS & SORBITAN

Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air.
Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture .
On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their susceptibility towards autoxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose ACD to these compounds by patch testing.
Allergic Contact Dermatitis—Formation, Structural Requirements,and Reactivity of Skin Sensitizers.
Ann-Therese Karlberg et al; Chem. Res. Toxicol.2008,21,53-69
Polyethylene glycols (PEGs) have a wide variety of PEG-derived mixtures due to their readily linkable terminal primary hydroxyl groups in combination with many possible compounds and complexes such as ethers, fatty acids, castor oils, amines, propylene glycols, among other derivatives. PEGs and their derivatives are broadly utilized in cosmetic products as surfactants, emulsifiers, cleansing agents, humectants, and skin conditioners.

PEGs and PEG derivatives were generally regulated as safe for use in cosmetics, with the conditions that impurities and by-products, such as ethylene oxides and 1,4-dioxane, which are known carcinogenic materials, should be removed before they are mixed in cosmetic formulations.
Most PEGs are commonly available commercially as mixtures of different oligomer sizes in broadly- or narrowly-defined molecular weight (MW) ranges. For instance, PEG-10,000 typically designates a mixture of PEG molecules (n = 195 to 265) having an average MW of 10,000. PEG is also known as polyethylene oxide (PEO) or polyoxyethylene (POE), with the three names being chemical synonyms. However, PEGs mainly refer to oligomers and polymers with molecular masses below 20,000 g/mol, while PEOs are polymers with molecular masses above 20,000 g/mol, and POEs are polymers of any molecular mass. Relatively small molecular weight PEGs are produced by the chemical reaction between ethylene oxide and water or ethylene glycol (or other ethylene glycol oligomers), as catalyzed by acidic or basic catalysts. To produce PEO or high-molecular weight PEGs, synthesis is performed by suspension polymerization. It is necessary to hold the growing polymer chain in solution during the course of the poly-condensation process. The reaction is catalyzed by magnesium-, aluminum-, or calcium-organoelement compounds. To prevent coagulation of polymer chains in the solution, chelating additives such as dimethylglyoxime are used
Safety Evaluation of Polyethyene Glycol (PEG) Compounds for Cosmetic Use: Toxicol Res 2015; 31:105-136 The Korean Society of Toxicology
http://doi.org/10.5487/TR.2015.31.2.105
The Cosmetic Ingredient Review (CIR) Expert Panel concluded that listed polysorbates are safe in cosmetics when formulated to be non-irritating. This conclusion supersedes the conclusion reached in the 1984, 2000, and 2001 CIR safety assessments. This safety assessment combines polysorbates reviewed in 3 previous safety assessments with other polysorbates that have not been reviewed by the CIR Panel into a group of 80 polyethoxylated sorbitan or sorbitol esters of fatty acid.
Following oral administration of polysorbate 20 to rats, ester bonds of polysorbates are hydrolyzed within the digestive tract by pancreatic lipase.24 Free fatty acids were absorbed from the digestive tract and oxidized and excreted, mainly as carbon dioxide in exhaled breath. No migration of the polyoxyethylene sorbitan into the thymus lymph nodes has been demonstrated. No sex difference has been detected in the disposition of polysorbates in rats. Following oral ingestion of polysorbate 20 in humans, 90% or more of the administered substance was excreted in the feces as metabolites, with the polyoxyethylene sorbitan structure maintained, and 2%-3% of these metabolites were excreted in the urine
The Panel considered the data available to characterize the potential for polysorbates to cause systemic toxicity, irritation, sensitization, reproductive and developmental toxicity, and genotoxicity. They noted the lack of systemic toxicity at low and moderate doses in several acute and repeated-dose oral exposure studies, and low toxicity at high doses; little or no irritation or sensitization in multiple tests of dermal and ocular exposure; the absence of genotoxicity in multiple Ames tests and chromosome aberration tests, and minimal irritation and lack of sensitization in tests of dermal exposure at concentration of use. The Panel recognizes that there are data gaps regarding use and concentration of these ingredients. However, the overall information available on the types of products in which these ingredients are used, concentrations of use and the similar pattern of use raise no safety concerns. The Panel note that polysorbate 20, polysorbate 65, and polysorbate 80 were shown to enhance dermal drug absorption. The Panel cautions that care should be taken in formulating cosmetic products that may contain these ingredients in combination with any ingredients whose safety was based on their lack of dermal absorption, or when dermal absorption was a concern. Especially, care should be taken when creating formulations intended for use on infants.
To address the possible presence of 1,4-dioxane and ethylene oxide impurities in these ingredients, the Panel stressed that the cosmetics industry should continue to use the necessary procedures to limit these impurities from the PEG ingredients before blending them into cosmetic formulations. The Panel expressed concern about pesticide residues and heavy metals that may be present in botanical (ie, coconut-derived) ingredients. They stressed that the cosmetics industry should continue to use current good manufacturing practices (cGMPs) to limit impurities. Data from the 1984 safety assessment suggested that polysorbates caused a slight enhancement of tumor development caused by 7,12-dimethyl-benz[a]anthracene (DMBA) and N-methyl-N -nitro-N-nitrosoguanidine (MNNG); however, the data were not consistent. For other compounds, the tumorigenic properties of 3-methyl-cholanthrene (MCA) and 3,4-benz[a]pyrene (BP) were not enhanced by polysorbates. Since the tumor enhancement effects were inconsistent and depended on the simultaneous exposure to strong chemical carcinogens, which are not present in cosmetics, the Panel felt that the weak tumor enhancement effects were not relevant to cosmetic formulations. Because some studies showed minimal irritation at concentrations that are used in cosmetics, the Panel cautioned that products containing these ingredients should be formulated to be non-irritating. It was noted that at the time of the 2001 safety assessment on sorbeth beeswaxes, the Panel had recommended that
cosmetic formulations containing PEGs not be used on damaged skin because of the possibility of renal toxicity when PEGs were applied to severely damaged skin, such as in burn patients. Since then, PEGs have been re-reviewed and the additional data demonstrated minimal dermal penetration of low-molecular weight PEGs. The amount of PEGs that would penetrate the stratum corneum barrier, even if damaged, from the use of cosmetics was well below the level of renal toxicity. Therefore, the Panel has removed the caveat that PEGs should not be used on damaged skin. The Panel strongly asserted that it is inappropriate to apply cosmetic products containing high concentrations of PEGs to individuals exhibiting barrier skin disruption through both the stratum corneum and the epidermis.
The Panel discussed the issue of incidental inhalation exposure from spray products, including aerosol and pump hair sprays, spray deodorants, spray body and hand products, and spray moisturizing products. The limited acute exposure

data available from 1 new inhalation study and 1 historical tracheal study suggest little potential for respiratory effects at relevant doses. These ingredients are reportedly used at concentrations up to 4% in cosmetic products that may be aerosolized. The Panel noted that 95%-99% of droplets/particles would not be respirable to any appreciable amount.
Coupled with the small actual exposure in the breathing zone and the concentrations at which the ingredients are used, the available information indicates that incidental inhalation would not be a significant route of exposure that might lead to local respiratory or systemic effects.
Safety Assessment of Polysorbates as Used in CosmeticJuly 2015
http://www.cir-safety.org/sites/default/files/PSorba_062015_FR_0.pdf
For Group D aliphatic esters:(sorbitan fatty esters)
Sorbitan fatty acid esters are mono-, di-, and triesters of fatty acids and sorbitol-derived hexitol anhydrides.
Sorbitan fatty acid esters were relatively nontoxic via ingestion in acute and long-term studies. They were generally minimal to mild skin irritants in animal studies, except that sorbitan isostearate applied to the skin was a moderate irritant in one rabbit study and when injected intradermally caused mild to severe irritation in guinea pigs. Sorbitan fatty acid esters did not sensitise guinea pigs. The fatty acid component, tested alone, typically caused only slight irritation and sensitisation, and was not photosensitising. Sorbitan fatty acid esters were not ocular irritants. Fatty acids are normal components of diet for which no data were available concerning reproductive or developmental toxicity, but Sorbitol had no adverse effects on the reproduction of CD rats during a multigeneration feeding study and was not a reproductive toxin at doses of 3000 to 7000 mg/kg/day for 2 years.
Overall these esters and their corresponding fatty acids were not mutagenic, but sorbitan oleate was reported to reduce DNA repair following ultraviolet radiation exposure in human lymphocytes in culture. Sorbitan laurate and sorbitan trioleate were cocarcinogens in one mouse study, but sorbitan trioleate and sorbitan oleate were not tumour promoters in another study. In clinical tests, Sorbitan fatty acid esters were generally minimal to mild skin irritants and were nonsensitizing, but sorbitan sesquioleate did produce an allergic reaction in fewer than 1% of patients with suspected contact dermatitis and addition of sorbitan sesquioleate to the components of a fragrance mix used in patch testing increased both irritant and allergic reactions to the fragrance mix. Careful consideration was made of the data on the cocarcinogenesis of sorbitan laurate and sorbitan trioleate, but the high exposure levels, high frequency of exposure, and absence of a dose-response led to the conclusion that there was not a cocarcinogenesis risk with the use of these ingredients in cosmetic formulations. Accordingly, these ingredients were considered safe for use in cosmetic formulations under the present practices of use.
Final report on the safety assessment of sorbitan caprylate, sorbitan cocoate, sorbitan diisostearate, sorbitan dioleate, sorbitan distearate, sorbitan isostearate, sorbitan olivate, sorbitan sesquiisostearate, sorbitan sesquistearate, and sorbitan triisostearate
Lanigan et al Int J. Toxicol 2002, pp 93-112
According to a classification scheme described by the American Chemistry Council' Aliphatic Esters Panel, Group D substances are esters of monoacids, mainly common fatty acids, and sorbitan (which is derived from sorbitol - a natural carbohydrate sweetener). The fatty acids include lauric, stearic, oleic acids and coca fatty acids (mainly lauric and myristic acids). The hydroxy group in the sorbitan represents the alcohol portion of the ester linkage. The Group D esters are carbohydrate-derived esters since the ester linkage is connected to the hydroxy group(s) of sorbitan. They may have single ester linkages (i.e., sorbitan monoester) or may have multiple ester linkages, as in the case of sorbitan sesquioleate and sorbitan trioleate. Multiple ester linkages with long-chain fatty acids increase lipophilicity and also tend to diminish water solubility. The sorbitan esters are non-ionic surfactant-active agents that typically find use as emulsifiers, stabilizers, and thickeners in foods, cosmetics and medical products.
Acute toxicity: Sorbitan esters do not represent a toxicological concern since they are derived from naturally occurring materials and the parent esters are ultimately metabolised back to these same natural constituents: namely, sorbitan and common fatty acids, both of which have low orders of toxicity. The oral LD50 in rats ranged from >2.9 g/kg to > 39.8 g/kg. Numerous sorbitan esters have been studied by acute oral and dermal administration. Results from these studies support the general conclusion that sorbitan fatty acid esters have low orders of acute toxicity.
Repeated Dose Toxicity. A large number of subchronic oral and dermal studies and chronic oral feeding studies have been carried out for sorbitan monolaurate, sorbitan monostearate and sorbitan monooleate , For sorbitan monostearate, no adverse effects were reported in rats fed 5% concentrations of the test substance in the diet for 6 weeks. The NOAEL was estimated to be 5% or approximately 2500 mg/kg/day. In 2-year feeding studies at 5, 10 and 20% in the diet rats tolerated sorbitan moonostearate with no adverse effects. However, at 20%, there was a small but significant decrease on growth rate in male rates. Hence, the NOAEL was 10% in the diet or approximately 5000 mg/kg/day in rats, based on these findings. In a 80-week dietary study in mice, no adverse effects were observed for sorbitan monostearate at 2% concentration in the diet and the NOAEL was 2% or approximately 2600 mg/kg/day . Subchronic studies have also been carried out with sorbitan, fatty acids C6-10, tetraester (CAS 228573-47-5).. Oral gavage studies for 28 days at dose levels up to 1000 mg/kg /day resulted in no systemic toxicity. Therefore, the NOAEL was 1000 mg/kg/day for this tetraester.
Since the sesquioleate and trioleate of sorbitan are merely multiple ester homologs of sorbitan monooleate, they would be expected to show similar effects, given their structural similarities and potential to be metabolised to the monooleate.
Sensitisation: Sorbitan fatty acid esters were generally minimal to mild skin irritants and were nonsensitising, but sorbitan sesquioleate did produce an allergic reaction in fewer than 1% of patients with suspected contact dermatitis and addition of sorbitan sesquioleate to the components of a fragrance mix used in patch testing increased both irritant and allergic reactions to the fragrance mix.
Reproductive and developmental toxicity: Limited reproductive toxicity data have been reported for the sorbitan esters. In a 2-year feeding studies in rats with sorbitan monostearate, there were no effects on gestation and fertility at any dose level (0, 5, 10 and 20% in the diet) but survival of the newborn animals and maternal lactation were slightly diminished at the 20% level.
Sorbitol was also studied indirectly as part of a mixture of hydrogenated starch hydrolysates (HSH) which contained about 7% sorbitol as part of the polyhydric alcohol mixture. The HSH mixture was investigated as part of a two-year ingestion study, a multigeneration reproduction study and a teratology study. At concentrations of 18% in drinking water (3000-7000 mg/kg/day), HSH did not produce reproductive or developmental effects . These results indicate that sorbitol does not cause reproductive/ developmental toxicity in animals. Given these findings and the low order of toxicity of natural fatty acids, it seems unlikely that sorbitan esters would present reproductive and developmental toxicity concerns.
Genotoxicity: Sorbitan monostearate (CAS 1338-41-6) was found to be negative in the Ames assay. In addition, the non-HPV substance, sorbitan fatty acid C6-10 tetraester (CAS 228573-47-5), did not cause any mutagenic effects in the Salmonella in vitro test. These substances bridge the low and high carbon range of most of the sorbitan esters and the chemistry of the sorbitan esters (i.e., sorbitan/ sorbitol, natural fatty acids) does not suggest the likelihood that the sorbitan esters are electrophilic or reactive in nature. Thus, it is not likely that the substances in Group D cause mutagenic effects.
Sorbitan monostearate did not transform primary Syrian golden hamster embryo cells. As discussed above for point mutation, the chemistry of the sorbitan esters does not suggest the likelihood that these substances, or their constituent substructures (i.e., sorbitol, fatty acids) are reactive or electrophilic in nature.
Carcinogenicity: Overall these esters and their corresponding fatty acids were not mutagenic, but sorbitan oleate was reported to reduce DNA repair following ultraviolet radiation exposure in human lymphocytes in culture. sorbitan laurate and sorbitan trioleate were cocarcinogens in one mouse study, but sorbitan trioleate and sorbitan oleate were not tumour promoters in another study.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

OVA LUBE PLUS

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

sulfonated castor oil

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	48h	Crustacea	>5mg/l	2
EC50	72h	Algae or other aquatic plants	>200mg/l	2
EC50(ECx)	48h	Crustacea	>5mg/l	2
LC50	96h	Fish	25mg/l	2

sorbitan monolaurate, ethoxylated

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	383mg/l	2

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Surfactants are in general toxic to aquatic organisms due to their surface-active properties. Historically, synthetic surfactants were often composed of branched alkyl chains resulting in poor biodegradability which led to concerns about their environmental effects. Today however, many of them, for example those used in large amounts, globally, as detergents, are linear and therefore readily biodegradable and considered to be of rather low risk to the environment. A linear structure of the hydrophobic chain facilitates the approach of microorganism while branching, in particular at the terminal position, inhibits biodegradation. Also, the bioaccumulation potential of surfactants is usually low due to the hydrophilic units. Linear surfactants are not always preferred however, as some branching (that ideally does not hinder ready biodegradability) is often preferable from a performance point of view. The reduction in waste water of organic contaminants such as surfactants can either be a consequence of adsorption onto sludge or aerobic biodegradation in the biological step. Similar sorption and degradation processes occur in the environment as a consequence of direct release of surfactants into the environment from product use, or through effluent discharge from sewage treatment plants in surface waters or the application of sewage sludge on land. However, a major part of surfactants in waste water will be efficiently eliminated in the sewage treatment plant. Although toxic to various organisms, surfactants in general only have a limited effect on the bacteria in the biological step. There are occasions however, where adverse effects have been noticed due to e.g. large accidental releases of softeners from laundry companies.
For aliphatic fatty acids and alcohols:
Environmental fate:
Saturated fatty acids are very stable in air, whereas unsaturated (C=C bonds) fatty acids are susceptible to oxidation.
Unsaturation increases the rate of metabolism although the degree of unsaturation and positioning of double bonds is not highly significant.
The available data indicate all fatty acid salt chain lengths up to and including C18 can be metabolised under aerobic conditions and can be considered to be readily biodegradable
All tests showed that fatty acids and lipids are readily biodegradable
The aliphatic acids are of similar very weak acid strength (approximately pKa 5), i.e., partially dissociate in aqueous solution; the salts of the aliphatic acids are highly dissociated in water solution such that the anion is the same for homologous salts and acids.
Slight (although inconsistent) effects on the trend for decreasing vapour pressure are also are also observed with the mono-, di-and tri-unsaturated substances as compared to the corresponding saturated substances.
Dicarboxylic acids: Compared to their corresponding single acid substances (C8-10 single component, saturated), the dicarboxylic acids exhibit modestly higher melting/ boiling points and water solubility, and lower partition coefficients and vapour pressures. The trends described above for changes in physical chemical properties with increasing carbon chain length apply.
Salts: As expected, the salts differ in physical / chemical properties as compared to their homologous single component substances. However the trends described above for single components with regard to changes in physical chemical properties with increasing carbon chain length apply
Models also indicate that the aliphatic acids will distribute primarily to soil and water, with lesser amounts to air and sediment. With increasing chain length, the percent distributions to soil and sediment generally increase and the percent distributions to water and air generally decrease.
.
The rate of degradation of fatty acids was investigated in two non-GLP studies.
The total fatty acids residue exhibits low persistence in soil. From the pattern of peaks decline, it was hypothesised a degradation pathway by the sequential elimination of C2 fragments. Consequently, the major soil metabolites of a given fatty acid would be other fatty acids with shorter chains.
Although mineralisation was not measured in these experiments, formation of CO2 is the expected terminal step of this process. Fatty acids undergo aerobic biodegradation by the process of beta-oxidation. Beta-oxidation of the parent fatty acid forms acetate and a new fatty acid of two less carbon atoms. This process repeats itself until the compound is completely broken down. The hydrocarbon will eventually be degraded to CO2 and H2O. For this reason, the length of the fatty acid chain does not preclude biodegradation, but it may take longer to achieve complete mineralisation. The beta-oxidation sequence does not necessarily require the presence of molecular oxygen, and fatty acid biodegradation may proceed under anaerobic conditions.
Hydrolysis is not an important fate path in the environment due to the fact that the substances lack hydrolysable functional groups. Aliphatic acids are hydrolytically stable in aqueous solution.
Water solubility:
In general,the water solubility of single carbon chain length substances followed a pattern of decreasing solubility as carbon chain length increases, especially at C16 and higher.

In addition, greater solubility is seen for dicarboxylic acids as compared to their homologous single acids:
In reviewing the physical/ chemical properties of the a.aliphatic acids, two predominant trends are clearly evident with increasing alkyl chain length and include: i) increasing melting point, boiling point, and partition coefficient, and ii) decreasing water solubility and vapour pressure. Within a given carbon chain length, melting point increases with increasing saturation and decreases with increasing unsaturation.The noted general trends with increasing alkyl chain length are observed when an entire single component group (12 saturated, 4 mono-unsaturated, 2 di-unsaturated, and 1 tri-unsaturated substances) is evaluated together; that is the degree of saturation or unsaturation does not alter the properties trend The effect of mono-unsaturation (C14:1 to C22:1) appears to be a slight increase in water solubility and a slight decrease in the partition coefficient, as compared to the corresponding saturated substances; a similar trend is noted for the C18 di- or tri-unsaturated substances.
Fatty acids (including methyl esters) were stable to hydrolysis in the pH range of 1-14. It is not expected that photolysis would significantly contribute to the degradation of fatty acids in water.
According to modelling,the aliphatic acids are subject to photodegradation in air. Estimated half-lives generally increase with decreasing chain length and range from 0.6 hours to 17.5 hours.
Methyl (and other) esters are estimated to exhibit high mobility and the acids very high mobility. Mobility may be expected to be higher for the salts than for the corresponding acids and methyl esters
Biodegradation studies or model estimations for single and multi-component aliphatic acids generally confirm that the extent of biodegradation observed in 28 days meets the ready biodegradability criterion (>60%). When the 10-day window was not met or less than 60%, biodegradation was observed in 28 days, it is likely that the aliphatic acids tested were not fully in solution.
Biodegradability tests demonstrated that pelargonic acid (C9), potassium salts and methyl octanoate / methyl decanoate are readily biodegradable. It can be assumed that both acids and methyl esters fatty acids C7-C18 are readily biodegradable.
No experimental bioaccumulation data appear to be available but log Kow data from various sources are higher than 4, which indicates that fatty acids and natural lipids have a potential for bioaccumulating in aquatic organisms.
Fatty alcohols up to chain length C18 are biodegradable, with length up to C16 biodegrading within 10 days completely. Chains C16 to C18 were found to biodegrade from 62% to 76% in 10 days. Chains greater than C18 were found to degrade by 37% in 10 days. Field studies at waste-water treatment plants have shown that 99% of fatty alcohols lengths C12-C18 are removed.
A review of soaps (including calcium and magnesium salts) states that the available data indicate all fatty acid salt chain lengths up to and including C18 can be metabolised under aerobic conditions and can be considered to be biodegradable. Biodegradability did not appear to be influenced by even or odd chain length, degree of saturation or unsaturation or branching. For example odd/even chain length C8 and C9 are readily biodegradable; Saturation/unsaturation: C18(saturated) and C18 (di-unsaturated) are biodegradable, while C18 (mono-unsaturated) are readily biodegradable; branching or hydroxylation: the C18 hydroxylated substance was readily biodegradable and the C18 methyl branched substance was biodegradable.
Higher water solubility of the potassium, sodium and ammonium salts make these a lower ranked analogy for the aquatic toxicity endpoints for the (non-salt) aliphatic acids (and vice versa), while lower water solubility of the magnesium and calcium salts make these a lower ranked analogy for all other members of the category
The aliphatic acids also undergo biodegradation under anaerobic conditions.
Estimated bioconcentration factor values are calculated using EPI Suite v4.10.The aliphatic acids have BCF
values less than 100, indicating a low potential for bioaccumulation
Fate prediction using fugacity modeling has shown that fatty alcohols with chain lengths of C10 and greater in water partition into sediment. Lengths C14 and above are predicted to stay in the air upon release. Modeling shows that each type of fatty alcohol will respond independently upon environmental release
Ecotoxicity
Structure-activity relationships based on carbon chain length are evident in the available data on the aquatic ecotoxicity of substances of this category (aquatic toxicity increases with increasing chain length up to a “cutoff” at or near 12 carbons).
The aliphatic acids category members possess properties indicating a hazard for the environment (acute toxicity to fish: between 1-100 mg/L for carbon chain lengths C6 through C12, and multi-component sodium or potassium salts C16-18; acute toxicity to aquatic invertebrates: between 1 and 100 mg/L for carbon chain lengths C6 through C9 (including sodium salts) and less than 1 mg/L for sodium salts single component aliphatic acids C18 and multi component sodium salt aliphatic acids with carbon chain lengths including C14 through C18; and, acute toxicity to aquatic plants: between 1-100 mg/L for carbon chain length C12, including sodium or ammonium salts).
There are a number of acute data for fatty acids and fatty acid salts to aquatic organisms although there is a predominance of data for fatty acid. There are few toxicity values for terrestrial organisms. Data availability / quality covering all the taxonomic groups for specific fatty acid salt chain lengths is poor. The chronic data set is very limited.
For chain lengths >C12, solubility decreases to a degree where an adverse effect would not be expected in the environment due to reduced biovailability. Data for longer chain lengths have been generated using solvents which makes interpretation more difficult.
The most of few available data indicate low toxicity towards aquatic organisms with EC/LC50 values above 1000 mg/l. However, EC/LC50 values below 100 mg/l are not unusual either
Fish, invertebrates and algae experience similar levels of toxicity with fatty alcohols although it is dependent on chain length with the shorter chain having greater toxicity potential. Longer chain lengths show no toxicity to aquatic organisms.
The available toxicity data indicated low acute and short-term (for birds only) toxicity to birds and mammals.Given that fatty acids are an essential component of the diet of birds and mammals a low risk is expected. On the basis that fatty acids are readily biodegradable and are an essential component of the diet of birds and mammals,. a low reproductive risk is expected.
No toxicity data were available for higher aquatic plants and therefore a risk assessment cannot be performed. As pelargonic acid, fatty acid/salt and C8-C10 methyl esters are used as herbicides and plant growth regulators,a data gap to address the risk to higher aquatic plants was identified
A low risk to natural populations of bees and non-target arthropods was concluded for representative greenhouses uses of potassium salts of fatty acids, fatty acid/salt and C8-C10 methyl esters.
Given that fatty acids are readily biodegradable a low risk to sewage treatment organisms was concluded for all of the representative uses.
For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350.
Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases.
Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids. Cationic surfactants are strongly sorbed by solids, particularly clays. Significant sorption of anionic and non-ionic surfactants has been observed in activated sludge and organic river sediments. Surfactants have been shown to improve water infiltration into soils with moderate to severe hydrophobic or water-repellent properties.
Ecotoxicity: Some surfactants are known to be toxic to animals, ecosystems and humans, and can increase the diffusion of other environmental contaminants. The acute aquatic toxicity generally is considered to be related to the effects of the surfactant properties on the organism and not to direct chemical toxicity. Surfactants should be considered to be toxic to aquatic species under conditions that allow contact of the chemicals with the organisms. Surfactants are expected to transfer slowly from water into the flesh of fish. During this process, readily biodegradable surfactants are expected to be metabolized rapidly during the process of bioaccumulation. Surfactants are not to be considered to show bioaccumulation potential if they are readily biodegradable.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13: Disposal information

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
sulfonated castor oil	Not Available
sorbitan monolaurate, ethoxylated	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
sulfonated castor oil	Not Available
sorbitan monolaurate, ethoxylated	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

sulfonated castor oil is found on the following regulatory lists

Not Applicable

sorbitan monolaurate, ethoxylated is found on the following regulatory lists

Not Applicable

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 (CLASS).

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (sulfonated castor oil; sorbitan monolaurate, ethoxylated)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (sulfonated castor oil)
Vietnam - NCI	Yes
Russia - FBEPH	No (sorbitan monolaurate, ethoxylated)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	29/03/2024
Initial Date	29/03/2024

Other information

Ingredients with multiple cas numbers

Name	CAS No
sorbitan monolaurate, ethoxylated	9005-64-5, 118955-39-8, 122304-31-8, 1242241-45-7, 129428-64-4, 1341-06-6, 1646144-25-3, 194879-92-0, 37310-96-6, 54174-54-8, 60318-54-9, 62229-28-1, 8036-82-6, 851015-03-7, 861842-35-5, 9011-30-7, 9015-57-0, 93037-36-6

Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC - TWA: Permissible Concentration-Time Weighted Average
- PC - STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

SAFETY DATA SHEET

Sodium Bicarbonate

Version 4

Section 1. Identification

Product identifier : Sodium Bicarbonate

Product code : 7385DF

ADG : -

Product type : Powder.

Identified uses : Alkalinity Control

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Section 2. Hazard(s) identification

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : May form combustible dust concentrations in air.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
sodium hydrogencarbonate	60 - 100	144-55-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media : Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Section 8. Exposure controls and personal protection

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: > 8 hours (breakthrough time): Nitrile gloves. or Neoprene gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Crystalline powder.]

Colour : White.

Odour : Odourless.

Odour threshold : Not available.

pH : 8.3 [Conc. (% w/w): 1% - (H2O)]

Melting point/freezing point : 60°C

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not applicable.

Vapour pressure : Not available.

Relative vapour density : Not applicable.

Relative density : 2.2

Solubility(ies) :

Media	Result
cold water	Easily soluble

Partition coefficient: n-octanol/water : Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
sodium hydrogencarbonate	LD50 Oral	Rat	4220 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,irritation,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
sodium hydrogencarbonate	Acute EC50 650000 µg/l Fresh water	Algae - *Navicula seminulum*	96 hours
	Acute LC50 767.87 mg/l Marine water	Crustaceans - *Americamysis bahia*	48 hours
	Acute LC50 1649.38 ppm Marine water	Crustaceans - *Mysidopsis juniae*	96 hours
	Acute LC50 7550 ppm Fresh water	Fish - *Gambusia affinis* - Adult	96 hours
	Chronic LOEL 1250 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-
	Chronic NOEC 576 mg/l Fresh water	Daphnia - *Daphnia magna* - Neonate	3 weeks
	Chronic NOEC 625 ppm Marine water	Echinodermata - *Lytechinus variegatus*	-

Conclusion/Summary : No known significant effects or critical hazards.

Persistence and degradability

Not available.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-

Section 14. Transport information

IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 4

Section 16. Any other relevant information

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET
SODIUM ERYTHORBATE
REVISION 5, DATE 23 SEP 2021

1. IDENTIFICATION

Product Name	**Sodium Erythorbate**
Other Names	D-Isoascorbic acid sodium salt, monohydrate; Erythorbic acid, sodium salt; Sodium D-Isoascorbate; Sodium erythorbate, monohydrate [CAS#63524-04-9]; Sodium isoascorbate; Sodium Isovitamin C
Uses	Food additive; Antioxidant, preservative.
Chemical Family	No Data Available
Chemical Formula	C6H7NaO6.H2O
Chemical Name	D-Erythro-hex-2-enonic acid, .gamma.-lactone, monosodium salt
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not Scheduled

Globally Harmonised System

Hazard Classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium erythorbate	C6H7NaO6.H2O	6381-77-7	>=98 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then give a glass of water. Do not induce vomiting. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for 10 - 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep warm and at rest in a position comfortable for breathing until recovered. Remove contaminated clothing and loosen remaining clothing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. In all cases of doubt, or when symptoms persist, seek medical attention.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	The material may be combustible at high temperature.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction.
Fire and Explosion Hazard	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Fire may produce irritating and/or toxic fumes, including Carbon oxides, Sodium oxides.

Hazardous Products of Combustion	
Special Fire Fighting Instructions	Contain runoff from fire control water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (if dust clouds can occur). Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep up and shovel. Keep in suitable, closed containers for disposal (see SECTION 13).
Containment	Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
Decontamination	Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.
Environmental Precautionary Measures	Avoid release directly into the environment. Do not let product enter drains. If contamination of sewers or waterways has occurred advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check regularly for spills. Keep away from extreme heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable dust).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/respirator. Use respirators and components tested and approved under appropriate government standards (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or Goggles. Use equipment for eye protection tested and approved under appropriate government standards. - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Rubber gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Wear overalls, safety shoes. Choose body protection in relation to its type, to the concentration and amount of hazardous substances, and to the specific work-place.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline powder
Odour	Odourless
Colour	White or slightly yellow
pH	5.5 - 10.0
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	154 - 164 °C
Freezing Point	No Data Available
Solubility	Soluble in water (16 g/100 ml) 20°C
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	>200 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	The material may be combustible at high temperature.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating and/or toxic fumes, including Carbon oxides, Sodium oxides.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No hazardous reactions when handled and stored according to provisions. In solution, it deteriorates in the presence of air, trace metals and light.
Chemical Stability	The product is stable under normal conditions.
Conditions to Avoid	Avoid dust formation. Keep away from heat and sources of ignition.
Materials to Avoid	Incompatible/reactive with strong oxidising agents.
Hazardous Decomposition Products	Fire/decomposition may produce irritating and/or toxic fumes, including Carbon oxides, Sodium oxides.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	Information on possible routes of exposure: - Ingestion: No adverse effects expected; however, large amounts may cause nausea and vomiting. - Eye contact: Mild irritant (Rabbit). Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes. - Skin contact: Contact with skin may result in irritation. - Inhalation: Material may be irritant to the mucous membranes of the respiratory tract. Chronic effects: No information available.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rats: 15.3 g/kg [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	The material is biodegradable.
Mobility	No information available.
Environmental Fate	Avoid release directly into the environment. Do not let product enter drains.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.
Special Precautions for Land Fill	Empty containers should be taken for local recycling, recovery or waste disposal. If empty container retains product residues, all label precautions must be observed.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Sodium Erythorbate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)
ADR Code

Proper Shipping Name	Sodium Erythorbate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Sodium Erythorbate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available

Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)
US DOT

Proper Shipping Name	Sodium Erythorbate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Sodium Erythorbate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	Sodium Erythorbate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	Not Hazardous

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	228-973-9
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	SOERYT1000, SOERYT1001, SOERYT1002, SOERYT1003, SOERYT1004, SOERYT1005, SOERYT1006, SOERYT1007, SOERYT1008, SOERYT1009, SOERYT1010, SOERYT1011, SOERYT1012, SOERYT1013, SOERYT1014, SOERYT1015, SOERYT1016, SOERYT1017, SOERYT1018, SOERYT1019, SOERYT1020, SOERYT1021, SOERYT1022, SOERYT1023, SOERYT1024, SOERYT1025, SOERYT1026, SOERYT1027, SOERYT1028, SOERYT1029, SOERYT1030, SOERYT1031, SOERYT1032, SOERYT1033, SOERYT1200, SOERYT1400, SOERYT1500, SOERYT1501, SOERYT1502, SOERYT1503, SOERYT1504, SOERYT1505, SOERYT1509, SOERYT1510, SOERYT1600, SOERYT1700, SOERYT1900, SOERYT2000, SOERYT2100, SOERYT2200, SOERYT2300, SOERYT2500, SOERYT2501, SOERYT2502, SOERYT2503, SOERYT3000, SOERYT3001, SOERYT3002, SOERYT3003, SOERYT3004, SOERYT3005, SOERYT3100, SOERYT3103, SOERYT3120, SOERYT3140, SOERYT3500, SOERYT4000, SOERYT5000, SOERYT6000, SOERYT7000, SOERYT7500, SOERYT9000, SOERYT9001, SOERYT9010
Revision	5
Revision Date	23 Sep 2021

Key/Legend

< Less Than
> Greater Than
AICS Australian Inventory of Chemical Substances
atm Atmosphere
CAS Chemical Abstracts Service (Registry Number)
cm^2 Square Centimetres
CO2 Carbon Dioxide
COD Chemical Oxygen Demand
deg C (°C) Degrees Celcius
EPA (New Zealand) Environmental Protection Authority of New Zealand
deg F (°F) Degrees Farenheit
g Grams
g/cm^3 Grams per Cubic Centimetre
g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH2O Inch of Water
K Kelvin
kg Kilogram
kg/m^3 Kilograms per Cubic Metre
lb Pound
LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or **L** Litre
m^3 Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m^3 Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH2O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight

SAFETY DATA SHEET

Triethanolamine

Version 2

Section 1. Identification

Product identifier : Triethanolamine

Product code : 1738DF

Chemical identity : 2,2',2''-nitrilotriethanol

Other means of identification : TRIETHANOLAMINE; Ethanol, 2,2',2''-nitrilotris-; 2,2',2''-Trihydroxyethylamine; Tris (2-hydroxyethyl)amine; trolamine; Ethanol, 2,2',2''-nitrilotri-

Product type : Liquid.

Identified uses : Various.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Section 2. Hazard(s) identification

Storage : Not applicable.

Disposal : Not applicable.

Precautionary statements (Code) : -, -, -, -, -

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Chemical identity : 2,2',2"-nitrilotriethanol

Other means of identification : TRIETHANOLAMINE; Ethanol, 2,2',2"-nitrilotris-; 2,2',2"-Trihydroxyethylamine; Tris (2-hydroxyethyl)amine; trolamine; Ethanol, 2,2',2"-nitrilotri-

Ingredient name	% (w/w)	CAS number
Triethanolamine	60 - 100	102-71-6

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Triethanolamine	**Safe Work Australia (Australia, 10/2022). Skin sensitiser. Inhalation sensitiser.** TWA: 5 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Section 8. Exposure controls and personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Hygroscopic.]

Colour : Colourless. Yellowish. Brown.

Odour : Characteristic.

Odour threshold : Not available.

pH : 10.5

Melting point/freezing point : 21.57°C

Boiling point, initial boiling point, and boiling range : 335.4°C (635.7°F)

Flash point : Closed cup: 185°C (365°F)

Evaporation rate : <0.005 (butyl acetate = 1)

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Lower: 3.6%
Upper: 7.2%

Vapour pressure : <0.0013 kPa (<0.01 mm Hg)

Relative vapour density : 5.1 [Air = 1]

Relative density : 1.1

: Not Available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : 324°C (615.2°F)

Decomposition temperature : 342.85 to 359.85°C

Viscosity : Dynamic: 590.5 cP

Explosive properties : Not available.

Section 9. Physical and chemical properties and safety characteristics

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Triethanolamine	LD50 Oral	Rat	7.39 g/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Triethanolamine	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
Triethanolamine	Acute LC50 100000 µg/l Marine water	Crustaceans - *Crangon crangon* - Adult	48 hours
	Acute LC50 11800000 µg/l Fresh water	Fish - *Pimephales promelas*	96 hours
	Chronic NOEC 16000 µg/l Fresh water	Daphnia - *Daphnia magna*	21 days

Persistence and degradability

Not available.

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Triethanolamine	-1	<3.9	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.		-	-	
ADG	Not regulated.		-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	-
ADG Class	No.	-
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

Section 15. Regulatory information

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

List name	Ingredient name	Status
Schedule III	Triethanolamine	Listed

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

Date of printing : 23 February 2024.

Date of issue/Date of revision : 23 February 2024

Date of previous issue : 10 March 2023

Version : 2

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Disclaimer

Section 16. Any other relevant information

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

W.O.™ DEFOAM

Version 5

Section 1. Identification

Product identifier : W.O.™ DEFOAM

Product code : 5048DF

ADG : -

Product type : Liquid.

Identified uses : Defoamer.

Supplier's details : Baker Hughes, Australia
631 Karel Avenue,
Jandakot,
Western Australia 6164,
Australia

Tel: 08 6595 7100

Emergency telephone number : CHEMTREC Emergency Telephone Numbers (Asia Pacific Region):
- Australia: (02) 9037 2994
- Brunei: +(65)-31581349 (Mandarin/English)
- China: 4001-204937 (Mandarin) *
- Hong Kong: 800-968-793 (Cantonese) *
- Indonesia: 001-803-017-9114 (Bahasa Indonesian) *
- Japan: 0800-300-5842 (Japanese)
- Malaysia: 1-800-815-308 (Bahasa Malay) *
- New Zealand: 9801 0034
- Philippines: 1-800-1-116-1020 (Tagalog) *
- PNG: +(61) 2 9037 2994
- Singapore: 800-101-2201 (Mandarin) *
- South Korea: 00-308-13-2549 (Korean) *
- Taiwan: 00801-14-8954 (Mandarin) *
- Thailand: 001-800-13-203-9987 (Thai) *
- Vietnam: +(84)-838012436 (Vietnamese)

- UK: +(44) 870-820-0418
- USA: +(1) 703-527-3887 (CHEMTREC International 24 hour)

* Number can only be dialled in-country

Section 2. Hazard(s) identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :



GHS07

Section 2. Hazard(s) identification

Signal word : WARNING

Hazard statements : H227 - Combustible liquid.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H335 - May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves: > 8 hours (breakthrough time): Butyl rubber gloves.. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing vapour. Wash thoroughly after handling.

Response : IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Precautionary statements (Code) : -, P280, P210, P261, P264, P304 + P312, P362 + P364, P302 + P352, P305 + P351 + P338, P337 + P313, P403 + P233, P501

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Additional information

Mixing of chemicals may create a reaction hazardous to one's health, to the environment, or a potential fire hazard.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Ingredient name	% (w/w)	CAS number
1-Hexanol, 2-ethyl-	60 - 100	104-76-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Section 4. First aid measures

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : irritation,redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, alcohol-resistant foam or water spray (fog).

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Section 5. Firefighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : -

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1-Hexanol, 2-ethyl-	**ACGIH TLV (United States, 1/2023).** TWA: 5 ppm 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended: > 8 hours (breakthrough time): Butyl rubber gloves.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: No personal respiratory protective equipment normally required.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Clear.]

Colour : Colourless.

Odour : Alcohol-like.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : -89°C

Boiling point, initial boiling point, and boiling range : 184 to 185°C (363.2 to 365°F)

Flash point : Closed cup: 81°C (177.8°F)

Evaporation rate : Not available.

Flammability (solid, gas) : May be combustible at high temperature.

Lower and upper explosion limit/ flammability limit : Not available.

Vapour pressure : 0.027 kPa (0.2 mm Hg) at 20°C

Relative vapour density : 4.49 [Air = 1]

Relative density : 0.82 to 0.84 (20°C)

Solubility(ies) :

Media	Result
cold water	Very slightly soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Other information

Pour point : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1-Hexanol, 2-ethyl-	LD50 Dermal LD50 Oral	Rat Rat	>3000 mg/kg 3290 mg/kg	- -

Conclusion/Summary : Harmful if inhaled. Adverse health effects could include the following: central nervous system depression

Irritation/Corrosion

Skin : May cause skin irritation.

Eyes : May cause eye irritation.

Respiratory : May cause respiratory irritation. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath.

Sensitisation

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
1-Hexanol, 2-ethyl-	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:,pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing

Skin contact : irritation,redness

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
1-Hexanol, 2-ethyl-	Acute LC50 75 mg/dm3 Fresh water	Fish - *Oncorhynchus mykiss* - Fry	96 hours
	Acute LC50 28200 µg/l Fresh water	Fish - *Pimephales promelas*	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
1-Hexanol, 2-ethyl-	-	>99 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
1-Hexanol, 2-ethyl-	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
1-Hexanol, 2-ethyl-	2.9	25.33	Low

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Transport hazard class(es)	PG*	Label
ADR/RID	Not regulated.	-	-	-	
ADG	Not regulated.	-	-	-	
IMDG	Not regulated.	-	-	-	
IATA	Not regulated.	-	-	-	

PG* : Packing group

Regulatory information	Environmental hazards	Additional information
ADR/RID Class	No.	**Hazchem code** -
ADG Class	No.	**Hazchem code** -
IMDG Class	No.	-
IATA Class	No.	-

Additional information**: A • in the Hazchem code indicates that Alcohol Resistant Foam is the preferred extinguishing medium. If not available, use the extinguishing medium indicated by the number in the Hazchem code.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

Australia inventory (AIIC) : All components are listed or exempted.

References : **National Code of Practice for the Control of Workplace Hazardous Substances.**

National Code of Practice for the Labelling of Workplace Substances.
National Code of Practice for the Preparation of Material Safety Data Sheets.
Approved Criteria for Classifying Hazardous Substances.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Any other relevant information

History

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Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Section 16. Any other relevant information

Classification	Justification
FLAMMABLE LIQUIDS - Category 4	On basis of test data
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

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