

Ungani Production Facility Commissioning and Operations Environment Plan Summary Document

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HSE



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1 Introduction

Buru Energy (Company) has developed the *Ungani Production Facility Commissioning and Operations Environment Plan* (HSE-PLN-037) (Environment Plan) for the management of environmental aspects associated with the Company's commissioning, production, care and maintenance, decommissioning and rehabilitation operations at the Ungani Facility (the Activity).

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

The characteristics of the wells are provided in Table 1. The Ungani Central, Ungani 4 and Ungani East well sites host multiple wells. The coordinate system used is GDA 94, Zone 51.

Table 1 Characteristics of the Ungani Facility wells

Well	Date Drilled	Location (m)		Depth	Well Site Dimensions
		Easting	Northing		
Ungani 1ST1	Aug. – Sep. 2011	517,375	8,010,864	2,324 m	Ungani Central Approx. 250 x 150 m
Ungani 2	Nov. – Jan. 2012	517,365	8,010,848	2,800 m	
Ungani 6H	Mar. – Sep. 2019	517,373	8,011,024	2,362 m	
Ungani 3	Jan. – Mar. 2014	518,470	8,011,035	2,284 m	Ungani East Approx. 150 x 160 m
Ungani 5	Dec. 2017	518,495	8,011,035	2,239 m	
Ungani 4ST1	Oct. – Nov. 2017 Sep. – Dec. 2018	517,096	8,010,450	2,249 m	Ungani 4 Approx. 175 x 120 m
Ungani 7H	Apr. – Sept 2019	517,057	8,010,453	2,527 m	
Ungani 8H	Dec. 2021 – Feb. 2022	517,090	8,011,512	2,500 m	Approx. 140 x 140 m
Ungani Far West 1	Nov. 2015 – Feb. 2016	514,225	8,008,842	2,400 m	Approx. 130 x 170 m
Ungani North 1	July – Aug. 2012 Oct. – Dec. 2012	517,415	8,017,229	3,701 m	Approx. 100 x 140 m
Ungani West 1	Oct. – Nov. 2018	515,937	8,010,322	2,400 m	Approx. 110 x 140 m

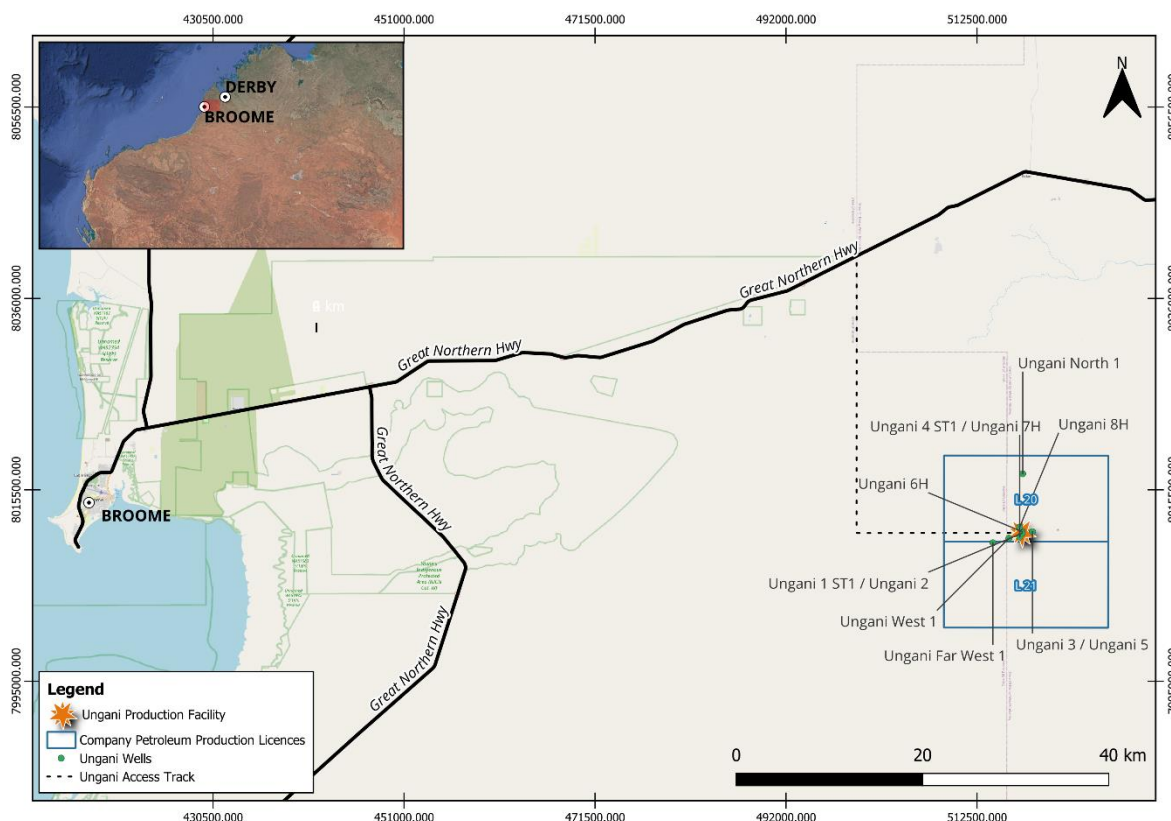


Figure 1 Location of the Ungani Facility

2.1 Timing

Production from the Facility under licence has been occurring since July 2015 when the L 20 and L 21 production licences were granted. Production operations are anticipated to continue for approximately five years from restart.

The Activity will occur year-round however may be suspended for periods (e.g. during maintenance or during weather events such as cyclones).

2.2 Mobilisation

During mobilisation for operations, equipment, personnel and supplies will be mobilised to the Activity area using dedicated vehicles. All travel on public roads will be in accordance with State road legislation and the Company's *Travel Management Procedure* (HSE-PRO-002).

2.3 Commissioning Process

The general steps of commissioning are:

- Pre-commissioning checks: safety and process checks to ensure operational components are ready for commissioning.
- Leak testing: use of water to test for leaks prior to introduction of hydrocarbons.
- Commissioning: production wells are flowed and the system inspected for leaks and function.

If production does not commence immediately following commissioning, the Facility will be shut-in and subject to ongoing inspections and maintenance.

2.4 Production Process

Depending on reservoir status, reservoir fluids may flow freely to surface or pumps are used as artificial lift. Produced fluid flows to separation tanks, with separated oil flowing to stock tanks, while produced water flows to water storage tanks. The limited gas given off during the separation process is released via the cold vent system.

The storage of the oil in the stock tanks allows further water separation which is transferred to the water storage tanks. Guided Wave Radar is used to determine the oil-water levels in the tanks. Any remaining gas in the crude oil is vented from each tank. The oil is then pumped to the load-out facility.

2.4.1 Produced Water Management

Produced water from the Ungani Facility is physically separated from the oil stream by the separation process. Oil that may be recovered by this process is returned via a flowline to the stock tanks. The primary method for managing produced water is via reinjection into the Ungani 3, Ungani 4 or Ungani West 1 wells. The Ungani Central turkeys nest may also be used for temporary storage of produced fluid.

All chemicals within the produced water reinjected have been fully disclosed in accordance with Regulation 15(9) of the *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012* and *Chemical Disclosure Guideline* published by DMP, in Appendix A.

2.5 Inspection and Maintenance

Inspection and maintenance operations will be ongoing throughout all phases of the Activity.

Maintenance operations include, but are not limited to, routine operations such as generator maintenance, and greasing and topping up oil on rotating equipment.

Wellhead maintenance operations may be undertaken which include wellhead maintenance, safety valve leak testing and well monitoring. The Company may also undertake wireline, slickline or e-line operations, or use the Buru jacking platform, hydraulic workover unit, coiled tubing unit or a rig to conduct downhole operations.

2.6 Waste Management

All putrescible wastes will be stored at the Ungani Production Facility in lidded skips/bins which remain closed to prevent fauna access and litter generation. Inert recyclable and industrial waste will be stored in skips. All waste types (putrescible, inert, recyclable and industrial) will be removed from the Ungani Production Facility and disposed offsite by an approved waste disposal contractor.

Sewage and grey water at the Ungani Production Facility is treated by an onsite Aerated Wastewater Treatment System.

2.7 Decommissioning and Rehabilitation

Following the completion of commissioning or maintenance operations, all Activity specific machinery and equipment will be removed from the Activity area. Progressive decommissioning will be ongoing as necessary.

The Company's base case for decommissioning is the complete removal of all infrastructure. The Company will continue with progressing decommissioning and rehabilitation operations, and proceed to full decommissioning of the Facility once the

end of field life has been reached. Decommissioning and rehabilitation will be undertaken in accordance with the Environment Plan and the Company *Rehabilitation Management Procedure* (HSE-PRO-035). To meet the Company's environmental objective for rehabilitation, completion criteria to measure longer term success of rehabilitation have been described in the Environment Plan.

3 Environmental Impacts and Management Measures

The Activity will be undertaken at the existing Ungani Production Facility and its associated satellite well sites as presented in Table 1. A summary of the existing environmental characteristics of the surrounding Activity area, potential impacts that could result from the Activity 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 the environmental risks.

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

Environmental Characteristic	Description	Potential Impacts	Key Management Measures	Risk	Implementation Strategy
Surface and groundwater	The Fitzroy River itself is located 53 km from the Ungani Facility. There is an area subject to inundation during the wet season around 800 m east of the Activity area. The surface potable aquifer in the region of the Ungani oilfield is the Wallal Sandstone. Depth to groundwater is approximately 35 m.	Disturbance of groundwater dependant ecosystems. Local groundwater drawdown caused by extraction above licensed allocation. Contamination of surface and/or ground water.	- Vehicles limited to the Activity area, travel in accordance with the <i>Travel Management Procedure</i> (HSE-PRO-002). - Weekly inspection of the Activity area for signs of erosion and sedimentation. - Fencing of the designated sewage disposal area and inspection of area. - Sedimentation or erosion will be addressed if it is severe and at risk of impacting on adjacent vegetation. - Use of the pre-existing 'Ring Road' for vehicle access at a section of the Ungani access track prone to flooding to minimise damage to track. - Operations with spill risks undertaken in bunded areas or over drip trays. - Waste will be managed in accordance with the <i>Waste Management Procedure</i> (HSE-PR-005). 500 mm freeboard maintained on excavations to prevent overtopping. - Dangerous and hazardous goods and chemicals will be stored within bunded areas. - Dangerous goods labelled in accordance with regulations and SDS. - Non-hazardous chemicals and bulk dry products will be stored in dedicated areas, with cover from rain as required. - Refuelling of vehicles in accordance with the <i>Refuelling Procedure</i> (HSE-PRO-011). - Hydrocarbon load-out operations will be within the designated bunded area. - All well activities will be managed in accordance with approved Well Management Plans (WMPs). - Periodic well integrity testing and inspection and appropriate maintenance/rectification procedures in accordance with the approved WMPs. - Wells have at least two barriers between the formation and potential aquifers. - All chemicals fully disclosed in accordance with regulation 15(9) of the <i>Petroleum and Geothermal Energy Resources (Environment) Regulations 2012</i>. - Vehicles, equipment and machinery are well maintained as per Original Equipment Manufacturer specifications and maintenance database. - Testing and inspections undertaken on tanks and steel flowlines in accordance with relevant asset management plans. - Emergency shutdown measures. - Supervision of well operations by personnel with well control certification. - Containment, clean-up and remediation if required of a spill in accordance with the <i>Ungani Production Facility Spill Response Plan</i>. - Monitoring of groundwater. - Bore water for the Activities extracted in accordance with the Company's groundwater licences as administered by DWER. - Meter installed on the Ungani extraction bore. - Volume of water extracted for the Activities will be recorded and reported to DWER.	Given the implementation of management measures, surface and ground water contamination is considered unlikely. Changes to groundwater hydrology is also considered unlikely.	- Person In Charge (PIC) to ensure no personnel or vehicle access outside of the Activity area. - PIC to ensure fences are maintained and gates closed. - PIC to ensure wastes are appropriately stored prior to disposal.
Landforms and soil	The geology and soils characteristic of the Dampierland bioregion are comprised of extensive riverine plains with grey and brown cracking clays; extensive sandplains or red earthy sands, low uplands of sandstone and limestone with shallow stony soils. Specifically, the Activity area is located within areas of red deep sands. Landscape elements (landforms) surrounding the Activity area consist of alluvial flood plains, sandy sheets, and hills with rocky outcrop, amongst others.	Severe soil erosion or sedimentation. Contamination of soil.		Through the implementation of management measures, it is unlikely that the Activity will have a significant impact on landforms or soil.	- PIC to complete weekly inspections. - PIC to ensure all dangerous and hazardous goods and chemicals are transported, stored and handled appropriately to prevent spills. - PIC to ensure all physical containment measures are well maintained. - PIC to ensure well maintained machinery, vehicles and equipment.
Vegetation and flora	Surrounding the Activity area, the vegetation has been described as pindan on sand plains. Pindan is "grassland wooded by a sparse upper layer of trees and a dense, thicket-forming middle layer of unarmed, phyllodal <i>Acacia</i> ". The vegetation system associations present around the Activity area are not analogous to Threatened Ecological Communities or Priority Ecological Communities.	Introduction / spread of weed species, including Declared Pests and WoNS. Unintentional clearing of native vegetation outside of Activity area. Disturbance / loss of vegetation, conservation significant flora species or fauna habitat.	- Earthmoving machinery and equipment inspected and cleaned prior to arrival at the Activity area. - Externally sourced gravel/fill will be weed free from an external supplier. - Prior to excavating gravel from a borrow pit, vegetation and topsoil will be removed and stockpiled separately. - Clearing will be restricted to re-clearing of previously disturbed areas e.g. firebreaks. - Vehicles and personnel access limited to the Activity area. - HSE induction for all operational personnel. - Vehicles comply with the <i>Travel Management Procedure</i> (HSE-PRO-002). - Vehicles, equipment and machinery are well maintained as per Original Equipment Manufacturer specifications and maintenance database.	Through the implementation of management measures, it is unlikely that the Activity will have a significant impact on vegetation, flora or conservation significant fauna species. The Company commits to rehabilitating the Activity areas upon completion of decommissioning operations.	- PIC to ensure well maintained firebreaks and firefighting equipment, regular servicing of machinery and equipment, and limiting smoking to designated areas. - PIC to ensure no personnel or vehicle access outside of the Activity area. - PIC to ensure all earthmoving machinery /

	Two Priority 3 flora species have been recorded in the vicinity of the Activity area: <i>Goodenia byrnesii</i> , <i>Goodenia Crenata</i> , and <i>Pterocaulon intermedium</i> (now de-listed)	Inadequate rehabilitation of Activity area.	- Any weeds identified during inspections will be removed by hand or sprayed. - Excavated soil for flowline trenching at track crossings will be stockpiled adjacent to the trench and used to re-fill the trench once the flowline has been laid.		equipment is checked prior to entering the Activity area. Weekly inspection of the Activity area.
Fauna	The only of fauna of conservation significance sighted during surveys in the vicinity of the Activity area were the Australian Bustard (<i>Ardeotis australis</i>, P4 now de-listed species), Black Bittern (<i>Ixobrychus flavicollis</i>, P3 now de-listed species), Grey Falcon (<i>Falco hypoleucos</i>, Vulnerable), and the Rainbow bee-eater (<i>Merops ornatus</i>, Migratory). No significant fauna habitat is present around the Activity area.	Attraction or injury of fauna from waste generation. Death or injury of conservation significant fauna. Death or injury of other fauna including cattle. Light, noise or dust generation impacting sensitive fauna.	- Waste managed in accordance with the <i>Waste Management Procedure</i> (HSE-PRO-005). - Firebreaks will be inspected and maintained. - Smoking restricted to designated smoking areas. - Subscription to local fire notifications to identify Total Fire Ban days. - Drivers being alert for cattle when driving. - Cellars will be fenced and covered with grating or similar to prevent fauna ingress. - Fauna egress paths and fencing surrounding open and lined excavations will be visually inspected and maintained to prevent macro fauna entering. - Lighting at the Facility and camp will be kept to a minimum required for safe operations and will face inwards to minimise light spill. - Night-time operations will be limited. - All work programs will include demobilisation requirements. - Firefighting equipment available. - Flame detection equipment installed and linked to the emergency shutdown system. - Permit to Work system.		- PIC to ensure lighting is the minimum for safe operations. - Weekly inspection of fauna egress paths and fencing.
Cultural heritage and local community	The Activity is located within a sparsely populated region with limited settlement, transport or communications infrastructure. Land use is dominated by open range pasture grazing of beef stock. The townships of Derby to the northeast and Broome to the west are the largest population centres in the vicinity of the Activity area. The nearest Homestead is Yakka Munga approximately 30 km east of the Activity area. Heritage surveys and clearances for the Ungani Facility and associated satellite well sies have been undertaken by representatives of the Native Title parties.	Light, noise or dust generation impacting landholders. Death or injury of other fauna including cattle. Damage to culturally significant site / object.	- Clearing will be restricted to re-clearing of previously disturbed areas. - HSE Induction for all operational personnel includes restriction of no vehicle or personnel access outside of the cleared Activity area. - Indigenous Land Use Agreements (ILUAs) signed with relevant Traditional Owner groups for the Ungani Facility. - In the event a potential heritage artefact is discovered during the activities, operations in the immediate area will be stopped and Traditional Owners will be contacted. - Ongoing consultation with local landholders and other stakeholders including regular notice/updates until completion of the Activity. - Consultation with relevant landholders regarding livestock management and mustering. - Station gates are left as found (open or closed) to minimise disturbance on pastoral operations. - Vehicles will comply with the <i>Travel Management Procedure</i> (HSE-PRO-002). - Dust suppression measures, such as water spraying will be implemented, as required. - All Company emissions reported in accordance with relevant legislation. - All wastes removed from the Activity area for disposal at a licensed facility. - Vehicle and personnel activity limited to the Activity area.	Given the implementation of the management measures, impacts on cultural heritage and the community are unlikely.	- PIC to ensure no disturbance outside of Activity area. - Weekly inspection for impacts outside of the Activity area.

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 area is 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;
- Department of Water and Environmental Regulation;
- Roebuck Plains Station;
- Karajarri Yanja Traditional Owners;
- Department of Fire and Emergency Services; and
- Broome and Derby Police.

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

The Company will continue to communicate with relevant stakeholders and consult during all phases of the Activity, on a formal and informal basis, and by email, letter, face-to-face and telephone.

Appendix A Chemical Disclosure and SDS

A. System Details:

Operator:	Buru Energy LTD
Project / Well:	Ungani Wells
System:	Well Intervention / Well Decommissioning (Cement and Spacer)
Total Volume of System (m³):	Approx. 625.933 m ³ (3,937 bbl)

B. Product List

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS 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 moisture, 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	SDS 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 moisture, 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, Aerosol, 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	SDS 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 Toxicity 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 occurring 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 LD50: 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	SDS Attached
				Freshwater Fish Toxicity 96h LC50: 125 mg/L (<i>Gambusia affinis</i>) [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 (<i>Selenastrum capricornutum</i>) [IUCLID; LOLI]; Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (<i>Ceriodaphnia dubia</i>) [IUCLID; LOLI]; Freshwater Fish Toxicity 96h LC50: 5000 mg/L (<i>Brachydanio rerio</i>) [IUCLID; LOLI]; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable. Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 ≤ 100% Component is naturally occurring 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 (<i>Skeletonema costatum</i>) [OSPAR]; Marine Water Crustacean Toxicity 48h LC50: > 2000 mg/L (<i>Acartia tonsa</i>) [OSPAR]; Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (<i>Scophthalmus maximus</i>) [OSPAR]; Bioaccumulation Log Kow: < 3.5 [Halliburton Funded Study]; Marine Water Biodegradation 28d: 6 % [Halliburton Funded Study]; CONSTITUENT 2 (≤100%): Product is naturally occurring 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. Biodegradability is not applicable for silica since it is inorganic. Additionally, bioaccumulation is not	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
				expected. Freshwater Algae Toxicity 72h EC50: 440 mg/L (<i>Selenastrum capricornutum</i>); Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (<i>Ceriodaphnia dubia</i>); Freshwater Fish Toxicity 96h LC50 5000 mg/L (<i>Brachydanio rerio</i>); Source: IUCLID 2000 CONSTITUENT 2 (≤60%): No Hazard - Product is naturally occurring CONSTITUENT 3 (≤1%): Freshwater Fish Toxicity 96h LC50: >1000 mg/L (<i>Brachydanio rerio</i>) Freshwater Crustacean Toxicity 24h LC50: >1000 mg/L (<i>Daphnia magna</i>) Marine Crustacean Toxicity 10d LC50: 50566 mg/kg (<i>Corophium volutator</i>)	
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 (<i>Pseudokirchnerella subcapitata</i>); Freshwater Crustacean Toxicity 96h EC50: >1000 mg/L (<i>Daphnia magna</i>); Freshwater Fish Toxicity 96h LC50: >1000 mg/L (<i>Danio rerio</i>); 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 (<i>Pseudokirchneriella subcapitata</i>); Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (<i>Ceriodaphnia dubia</i>); Freshwater Fish Toxicity 96h LC50: 5000 mg/L (<i>Danio rerio</i>); 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 (<i>Pseudokirchnerella subcapitata</i>); Freshwater Crustacean Toxicity 96h EC50: >1000 mg/L (<i>Daphnia magna</i>); Freshwater Fish Toxicity 96h LC50: >1000 mg/L (<i>Danio rerio</i>); 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 (<i>Pseudokirchneriella subcapitata</i>); Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (<i>Ceriodaphnia dubia</i>); Freshwater Fish Toxicity 96h LC50: 5000 mg/L (<i>Danio rerio</i>); 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	SDS 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%): Component is naturally occurring 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 LISTED Marine 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: 7.45 CONSTITUENT 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: 4.28 CONSTITUENT 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 occurring CONSTITUENT 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: 7.09 No data available to indicate product or components 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	SDS 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 Fish 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	SDS 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	SDS 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	SDS 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 occurring 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	SDS 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 ($\leq 1\%$): 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 ($\leq 100\%$): 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 LISTED CONSTITUENT 1 ($\leq 100\%$): 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 EC50: 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 0.7 Marine Water Biodegradation 28d: 61% [OSPAR]; CONSTITUENT 2 ($\leq 30\%$): Oral LD50: 5840 mg/kg (Rat), Dermal LD50: 12870 mg/kg (Rabbit), Inhalation LC50: 72.6 mg/L (Rat) 4h Vapor Freshwater 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 < 4.5 Readily biodegradable (53% @ 5d) Freshwater Biodegradation 14d: 83% [HSDB]; CONSTITUENT 3 ($\leq 30\%$): No Hazard - Product is naturally occurring CONSTITUENT 4 ($\leq 1\%$): Oral LD50: 600 mg/kg (Rat) (Similar Substance), Dermal LD50: >2000 mg/kg (Rat) Similar Substance Freshwater Algae Toxicity 96h EC50: 0.7 mg/L (Selenastrum capricornutum) [CCID] (similar substance); Freshwater	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS 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 Data Not Bioaccumulative Bioaccumulation 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 ($\leq 100\%$): 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 ($\leq 30\%$): 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 ($\leq 10\%$): 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 ($\leq 5\%$): 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	SDS 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 ($\leq 100\%$): 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 ($\leq 100\%$): Component is naturally occurring and not intrinsically hazardous. CONSTITUENT 2 ($\leq 1\%$): 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	SDS 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 ($\leq 5\%$): 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 ($\leq 1\%$): 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 ($\leq 100\%$): 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 ($\leq 10\%$): Component is naturally occurring and not intrinsically hazardous.	Yes
Tuned Defense	Halliburton	Cement Spacer	0.0489%	CONSTITUENT 1 ($\leq 60\%$): Component is naturally occurring and not intrinsically hazardous. Marine water Crustacean Toxicity 96h TLM: >1,000,000 mg/L (Mysidopsis bahia) CONSTITUENT 2 ($\leq 30\%$):	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS Attached
				No data available; Bioaccumulation: Substance is inorganic - bioaccumulation is not applicable; Biodegradation: Substance is inorganic - biodegradation is not applicable. CONSTITUENT 3 ($\leq 30\%$): 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 ($\leq 10\%$): Acrylic polymer - not toxic; Bioaccumulation: No information available; Biodegradation: Not readily biodegradable. CONSTITUENT 5 ($\leq 10\%$): 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 ($\leq 5\%$): 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 ($\leq 5\%$): 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	SDS Attached
				Freshwater Fish Toxicity 96h LC50: 1516 mg/L (<i>Lepomis macrochirus</i>); Bioaccumulation: Log Pow = -1.61 to -1.80; Biodegradation: Readily biodegradable (97% @ 28d). CONSTITUENT 8 ($\leq 1\%$): Oral LD50: 10000 mg/kg (Rat); Inhalation LC50: > 16 mg/L (Rat) 1h (similar substance); Freshwater Algae Toxicity 72h EC50: > 100 mg/L (<i>Pseudokirchnerella subcapitata</i>); Freshwater Crustacean Toxicity 48h LC50: 1955 mg/L (<i>Daphnia magna</i>); Freshwater Fish Toxicity 96h LL50: >100 mg/L (<i>Danio rerio</i>); Bioaccumulation: No information available; Biodegradation: No information available. CONSTITUENT 9 ($\leq 1\%$): Oral LD50: > 15000 mg/kg (human); Freshwater Algae Toxicity 72h EC50: 440 mg/L (<i>Pseudokirchneriella subcapitata</i>); Freshwater Crustacean Toxicity 48h LC50: > 10000 mg/L (<i>Daphnia magna</i>); Freshwater Fish Toxicity 96h LC50: 10000 mg/L (<i>Danio rerio</i>); 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 (<i>Skeletonema costatum</i> [HES Inter al Study] Marine Fish toxicity LC50: >1000 mg/L (<i>Scophthalmus maximus</i>) [HES study] Marine Crustacean toxicity EC50: > 2000 mg/L (<i>Acartia tonsa</i>) [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 $\leq 100\%$ Marine Water Algae Toxicity EC50: >3300 mg/L (<i>Skeletonema costatum</i> [HES Inter al Study] Marine Water Crustacean Toxicity EC50: > 2000 mg/L (<i>Acartia tonsa</i>) [HES study] Marine Fish Toxicity LC50: >1000 mg/L (<i>Scophthalmus maximus</i>) [HES study] Bioaccumulation Log Pow: <0 OECD 117 [HES Study] 0% (OECD 306) [HES Study] CONSTITUENT 2 $\leq 5\%$	Yes

Trade name	Supplier	Purpose	Mass % of Total	Ecotoxicity Info	SDS 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 LISTED CONSTITUENT 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 occurring 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	SDS 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 Internal 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 (Acartia 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	SDS Attached
				Marine Crustacean Toxicity EC50(48 h)=4.1 mg/L (<i>Acartia tonsa</i>) Freshwater Crustacean Toxicity NOEC(21 d)=1.3 mg/L (<i>Daphnia magna</i>)	
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 (<i>Onchorhynchus mykiss</i>) 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 (<i>Pseudokirchneriella subcapitata</i>) [ECHA]; Freshwater Algae Toxicity 72h NOEC: >100 mg/L (<i>Selenastrum capricornutum</i>) [IUCRID 2000]; Freshwater Crustacean Toxicity 48h EC50: 1.9 mg/L (<i>Ceriodaphnia dubia</i>) [ECHA] (similar substance); Freshwater Crustacean Toxicity 48h NOEC: >100 mg/L (<i>Daphnia magna</i>) [IUCRID 2000]; Freshwater Fish Toxicity 96h LC50: 0.078-0.108 mg/L (<i>Salmo salar</i>) [ECHA]; Freshwater Fish Toxicity 96h NOEC: >100 mg/L(<i>Salmo trutta</i>) [IUCRID 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 (<i>Skeletonema costatum</i>) [HES Study] Marine Water Crustacean toxicity LC50: 2319 mg/L (<i>Acartia tonsa</i>) [HES Study] Marine Water Fish toxicity LC50: >87.02 mg/L (<i>Cyprinodon variegatus</i>) [HES Study] 48% @ 28 days (OECD 306) Biodegradation 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	SDS 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 (Acartia 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	SDS 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	SDS Attached
				CONSTITUENT 3 ($\leq 10\%$) 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 Fish 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 ($\leq 1\%$) 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 ($\leq 100\%$) Toxicity to Invertebrates EC50 (24h) No effects at saturation (Daphnia magna) Component is an inert, man-made substance and not intrinsically hazardous. CONSTITUENT 3 ($\leq 1\%$) 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	SDS Attached
				mg/L (Leuciscus melanotus) LC50(24h) 145 mg/L (Poecilia reticulata) 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 ($\leq 2\%$)	
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 (Oxide glass chemicals)	65997-17-3	0.949%
Barium Sulfate	7727-43-7	0.928%
Silica, amorphous – fumed (Silicon dioxide)	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%
Polypropylene glycol	25322-69-4	0.112%

Chemical Name	CAS Number	Mass %
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%
Sorbitan, monopalmitate	26266-57-9	0.00379%

Chemical Name	CAS Number	Mass %
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%



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 - HGS2000, HGS3000, HGS4000, HGS5000, HGS6000, HGS8000X, HGS10000, HGS18000, HGS4K28, HGS7K32, HGS19K46

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

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
Oxide glass chemicals	65997-17-3	97 - 100
Silicon dioxide	7631-86-9	0 - 3

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	
Oxide glass chemicals	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m ³ ;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m ³	
Silicon dioxide	7631-86-9	Australia OELs	TWA(respirable fraction)(8 hours):2 mg/m ³	

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	<i>Not applicable.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>No data available.</i>
Boiling point/Initial boiling point/Boiling range	<i>Not applicable.</i>
Flash point	<i>Not applicable.</i>
Evaporation rate	<i>Not applicable.</i>
Flammability	Not applicable.
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Vapour pressure	<i>Not applicable.</i>
Vapor Density and/or Relative Vapor Density	<i>Not applicable.</i>
Density	0.25 - 0.63 g/cm ³
Relative density	0.25 - 0.63 [Ref Std: WATER=1]
Water solubility	Negligible
Solubility- non-water	<i>Not applicable.</i>

Partition coefficient: n-octanol/water	No data available.
Autoignition temperature	Not applicable.
Decomposition temperature	Not applicable.
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 °C

Particle Characteristics	Not applicable.

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

Oxides of sulphur.

Condition

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 ATE >2,000 - =5,000 mg/kg
Oxide glass chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Oxide glass chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Silicon dioxide	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silicon dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silicon dioxide	Ingestion	Rat	LD50 > 5,110 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Oxide glass chemicals	Professional judgement	No significant irritation
Silicon dioxide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Oxide glass chemicals	Professional judgement	No significant irritation
Silicon dioxide	Rabbit	No significant irritation

Skin Sensitisation

Name	Species	Value
Silicon dioxide	Human and animal	Not classified

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
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silicon dioxide	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Silicon dioxide	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Silicon dioxide	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silicon dioxide	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

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
Oxide glass chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Silicon dioxide	Inhalation	respiratory system silicosis	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
Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Oxide glass	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l

3M™ Glass Bubbles HGS Series - HGS2000, HGS3000, HGS4000, HGS5000, HGS6000, HGS8000X, HGS10000, HGS18000, HGS4K28, HGS7K32, HGS19K46

chemicals						
Oxide glass chemicals	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Oxide glass chemicals	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
Silicon dioxide	7631-86-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Oxide glass chemicals	65997-17-3	Data not available-insufficient	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	Data not available-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Oxide glass chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silicon dioxide	7631-86-9	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:

Not applicable, as this product/s aligns with the AICIS definition of an article.

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

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
 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

Response**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
 Glutaraldehyde

CAS Number
 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
Odor: Sharp

Color Clear light yellow
Odor Threshold: No information available

PropertyValuesRemarks/ - Method**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's constant (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 AICS 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 abbreviations 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/m³ - 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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

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

<u>ADG</u>	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 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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/ft ³	
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 ecotoxicity	There is no data for this product.

<u>Persistence and degradability</u>	No information available

<u>Bioaccumulation</u>	No information available.

<u>Mobility</u>	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

<u>ADG</u>	Not regulated

<u>IATA</u>	Not regulated

<u>IMDG</u>	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) (AELG(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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determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

3.2. Mixtures

Product Service Line (PSL)

Principle Route of Exposure

Hazard Pictograms

Precautionary statements

Baroid

Eye or skin contact, inhalation, Ingestion, Skin contact, Eye contact, Inhalation

PSL Logo

HALLIBURTON

HALLIBURTON

Baroid

Transport information

Shipping classification for non-DG Not restricted

HS Code

3913.90.2015

ECCN

EAR99

Contains

NFPA

Health 0
hazard
s

Flamm 0
ability

Instabi 0
lity

Specia -
l hazard
s

HMIS

Health 0
hazard
s

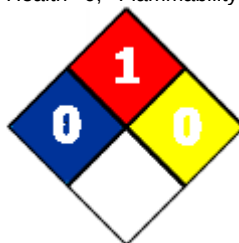
Flamm 0
ability

Physic 0
al hazard
s

PersonX
al protect
ion

NFPA Ratings:
NFPA Label

Health 0, Flammability 1, Reactivity 0



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

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/m ³	TWA: 0.05 mg/m ³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m ³ (vacated) TWA: 0.1 mg/m ³ respirable dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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/cm ³)	
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
<u>Other information</u>		
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 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)

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) (AELG(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 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

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/m ³	TWA: 0.025 mg/m ³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m ³ (vacated) TWA: 0.1 mg/m ³ respirable dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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/cm ³)	
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
<u>Other information</u>		
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

AIIIC 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

AIIIC - 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

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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 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

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) (AELG(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 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

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**

Portland cement
 Crystalline silica, quartz

CAS Number

65997-15-1
 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

<u>Property</u>	<u>Values</u>
Remarks/ - Method	
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 AIC 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 abbreviations 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/m³ - 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

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

Contains no hazardous substances in concentrations above cut-off values according to the competent authority

CAS Number

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
Odor: Odorless

Color White to off white
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 AICS 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 abbreviations 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/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

w/w - weight/weight

d - day

Key literature references and sources for data

www.ChemADVISOR.com/

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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 ecotoxicity 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

UN number or ID number 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 - najwyższe dopuszczalne stężenie 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 Zealand 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/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NDS - OEL-TWA [Poland najwyższe dopuszczalne stężenie 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
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 - najwyższe dopuszczalne stężenie 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 Zealand 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/m³ - milligram/cubic meter
 mm - millimeter
 mmHg - millimeter mercury
 NDS - OEL-TWA [Poland najwyższe dopuszczalne stężenie 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)

Disclaimer

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

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**

Sodium silicate

CAS Number

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

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
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 AICS 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 abbreviations 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/m³ - 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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

<u>Ecotoxicity</u>	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.
<u>Persistence and degradability</u>	Based on available data, the classification criteria are not met
<u>Bioaccumulation</u>	There is no data for this product.
<u>Mobility</u>	Based on available data, the classification criteria are not met
<u>Other adverse effects</u>	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

<u>ADG</u>	Not regulated
<u>IATA</u>	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

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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

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

Contains no hazardous substances in concentrations above cut-off values according to the competent authority

CAS Number

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

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
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 AIC 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 abbreviations 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/m³ - 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

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**
 Tartaric acid

CAS Number
 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

Respiratory Protection	industrial hygienist or other qualified professional based on the specific application of this product. 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

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
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 AICS 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 NoteSDS 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 abbreviations 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/m³ - 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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 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

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/m ³	TWA: 1 mg/m ³ respirable particulate matter
Calcium hydroxide 1305-62-0	TWA: 5 mg/m ³	TWA: 1 mg/m ³ STEL: 4 mg/m ³	TWA: 5 mg/m ³

Chemical name	OSHA PEL	NIOSH
Calcium hydroxide 1305-62-0	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ not in effect as a result of reconsideration	TWA: 5 mg/m ³

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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

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

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

Contains no hazardous substances in concentrations above cut-off values according to the competent authority

CAS Number

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
Odor: Odorless

Color White to Light gray
Odor Threshold: No information available

PropertyValuesRemarks/ - Method**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 AICC or are subject to a relevant exemption, permit, or

New Zealand Inventory of Chemicals assessment certificate.
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 abbreviations 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/m³ - 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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) (AELG(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 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

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 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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)

Disclaimer

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

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

Contains no hazardous substances in concentrations above cut-off values according to the competent authority

CAS Number

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

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
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 AICS 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 abbreviations 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/m³ - 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

Disclaimer Statement

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End of Safety Data Sheet

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 (Scophthalmus 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

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].
P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Storage
Disposal****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.

Hand Protection

In high concentrations, supplied air respirator or a self-contained breathing apparatus. 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
Odor: Alcohol

Color Clear light yellow
Odor Threshold: No information available

PropertyValuesRemarks/ - Method**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 (Selenastrum capricornutum) (similar substance) NOEC (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 AICS 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 abbreviations 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/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

w/w - weight/weight

d - day

Key literature references and sources for datawww.ChemADVISOR.com/

NZ CCID

HERA

OSHA

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

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

Paraffin based petroleum oil

CAS Number

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/m ³	TWA: 5 mg/m ³

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
Odor: Mild

Color Yellowish
Odor Threshold: No information available

PropertyValuesRemarks/ - Method**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 AICS 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 abbreviations 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/m³ - 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

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

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 sensitizer. 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/m ³	TWA: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter
Crystalline silica, quartz 14808-60-7	TWA: 0.05 mg/m ³	TWA: 0.025 mg/m ³	-

Chemical name	OSHA PEL	NIOSH
Portland cement 65997-15-1	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction TWA: 50 mppcf <1% Crystalline silica	IDLH: 5000 mg/m ³ TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m ³ (vacated) TWA: 0.1 mg/m ³ respirable dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust

	: (10)/(%SiO ₂ + 2) mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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
<u>Other information</u>	
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) (AELG(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 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

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/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 5 mg/m ³ inhalable particulate matter excluding metal working fluids, highly & severely refined
Aluminum 7429-90-5	TWA: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 10 mg/m ³	TWA: 1 mg/m ³ respirable particulate matter

Chemical name	OSHA PEL	NIOSH
Paraffin based petroleum oil 8012-95-1	TWA: 5 mg/m ³ (vacated) TWA: 5 mg/m ³	IDLH: 2500 mg/m ³ TWA: 5 mg/m ³ STEL: 10 mg/m ³
Aluminum 7429-90-5	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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 ecotoxicity 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/NDL	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/NDL - 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 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

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

Contains no hazardous substances in concentrations above cut-off values according to the competent authority

CAS Number

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 availablePropertyValuesRemarks/ - Method**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 AICS 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 abbreviations 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/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

w/w - weight/weight

d - day

Key literature references and sources for data

www.ChemADVISOR.com/

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

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

Sodium fluorescein

CAS Number

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

Color: Red-orange

Odor: Odorless

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 AICS 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 abbreviations 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/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

w/w - weight/weight

d - day

Key literature references and sources for data

www.ChemADVISOR.com/

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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 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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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 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

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/NDL	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/NDL** - 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 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

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

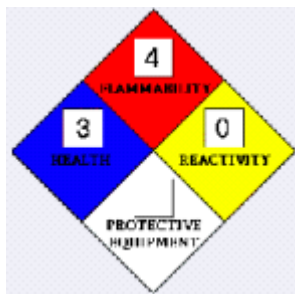
4002.11.0000

ECCN

EAR99

Contains**NFPA**
Health 0
hazard
s
Flamm 0
ability
Instabi 0
lity
Specia -
l
hazard
s
HMIS
Health 0
hazard
s
Flamm 0
ability
Physic 0
al
hazard
s
PersonX
al
protect
ion

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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/ft ³ @ 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 (Skeletonea 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)

Disclaimer

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5 - 7	(40 g/L% in H ₂ O)
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 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

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/m ³	TWA: 0.05 mg/m ³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz	TWA: 50 µg/m ³	IDLH: 50 mg/m ³ respirable dust

14808-60-7	(vacated) TWA: 0.1 mg/m ³ respirable dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	TWA: 0.05 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
<u>Other information</u>	
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 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 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 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

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/m ³	TWA: 0.05 mg/m ³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m ³ (vacated) TWA: 0.1 mg/m ³ respirable dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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 ecotoxicity 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 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

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/m ³	TWA: 0.05 mg/m ³	-

Chemical name	OSHA PEL	NIOSH
Crystalline silica, quartz 14808-60-7	TWA: 50 µg/m ³ (vacated) TWA: 0.1 mg/m ³ respirable dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
<u>Other information</u>		
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 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 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/NDL	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/NDL - 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 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

A. System Details:

Operator:	Buru Energy LTD
Project / Well:	Ungani Wells
System:	Well Intervention / Well Decommissioning (Cement and Spacer)
Total Volume of System (m³):	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: Aromatic polymer sulfonated derivative: LD50 oral (Rat) >40g/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: 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
EZEFL0* 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	
EZEFL0* 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-Butadiene 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.



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,

Skin and body protection	respiratory protection with air supply must be used. 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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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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 (CO₂), 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/m ³ TWArespirable dust 10mg/m ³ TWAinhalable	Not determined
3,3"-methylenebis[5-methyloxazolidine]	Not determined	Not determined	Not determined
Chemical Name	India	Indonesian	Japan
Silicon Dioxide	10 mg/m ³ 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/m ³ MAC	6.0 mg/m ³ 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/m ³ TWA 2 mg/m ³ TWA 3 mg/m ³ MAC 6 mg/m ³ 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

Skin and body protection

combination filter for vapor/particulate Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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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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/m ³ TWA	0.05mg/m ³ TWArespirable dust	Not determined
Chemical Name	India	Indonesian	Japan
Quartz, Crystalline silica	Not determined	0.025 mg/m ³ TWA	0.03 mg/m ³ OEL
Chemical Name	Kazakhstan	Kuwait	New Zealand
Quartz, Crystalline silica	1 mg/m ³ MAC	0.1 mg/m ³ TWA	0.05 mg/m ³ TWA Confirmed carcinogen
Chemical Name	Malaysia	Philippines	Russia
Quartz, Crystalline silica	0.1 mg/m ³ TWA	Not determined	1 mg/m ³ TWA 3 mg/m ³ 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/m ³ 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 protectionWear 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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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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 (NO_x), 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/m³ Respirable Dust, 10mg/m³ 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/m ³ 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 <i>Lepomis macrochirus</i> 96 h	No information available	2,400 mg/L EC50 (<i>Daphnia magna</i>) = 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

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

SDS no. D907

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/m ³ TWA	10 mg/m ³ TWA	Not determined
Chemical Name	India	Indonesian	Japan
Portland Cement Clinker	10 mg/m ³ TWA	1 mg/m ³ TWA	4 mg/m ³ OEL 1 mg/m ³ OEL
Chemical Name	Kazakhstan	Kuwait	New Zealand
Portland Cement Clinker	Not determined	10.0 mg/m ³ TWA 5.0 mg/m ³ TWA	3 mg/m ³ TWA 1 mg/m ³ TWA dermal sensitiser
Chemical Name	Malaysia	Philippines	Russia
Portland Cement Clinker	10 mg/m ³ 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/cm ³	
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

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.

This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.



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

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

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 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
Respiratory protection	Be aware that liquid may penetrate the gloves. Frequent change is advisable. 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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 - Not classified
Single exposure
Specific target organ toxicity - Not classified.
Repeated exposure

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

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 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/m ³ TWA	10 mg/m ³ TWA	Not determined
Quartz, Crystalline silica	0.1 mg/m ³ TWA	0.05mg/m ³ TWArespirable dust	Not determined
Respirable Crystalline Silica (Quartz)	0.1 mg/m ³ TWA	0.05mg/m ³ TWArespirable dust	Not determined
Chemical Name	India	Indonesian	Japan
Portland Cement Clinker	10 mg/m ³ TWA	1 mg/m ³ TWA	4 mg/m ³ OEL 1 mg/m ³ OEL
Quartz, Crystalline silica	Not determined	0.025 mg/m ³ TWA	0.03 mg/m ³ OEL
Respirable Crystalline Silica (Quartz)	Not determined	0.025 mg/m ³ TWA	0.03 mg/m ³ OEL
Chemical Name	Kazakhstan	Kuwait	New Zealand
Portland Cement Clinker	Not determined	10.0 mg/m ³ TWA 5.0 mg/m ³ TWA	3 mg/m ³ TWA 1 mg/m ³ TWA dermal sensitiser
Quartz, Crystalline silica	1 mg/m ³ MAC	0.1 mg/m ³ TWA	0.05 mg/m ³ TWA Confirmed carcinogen
Respirable Crystalline Silica (Quartz)	1 mg/m ³ MAC	0.1 mg/m ³ TWA	0.05 mg/m ³ TWA Confirmed carcinogen
Chemical Name	Malaysia	Philippines	Russia
Portland Cement Clinker	10 mg/m ³ TWA	Not determined	Not determined
Quartz, Crystalline silica	0.1 mg/m ³ TWA	Not determined	1 mg/m ³ TWA 3 mg/m ³ 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/m ³ TWA	Not determined	1 mg/m ³ TWA 3 mg/m ³ 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/m ³ TWA	Not determined	Not determined
Respirable Crystalline Silica (Quartz)	0.025 mg/m ³ 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/cm ³
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

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 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 (CO₂), 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 - Not classified.
Repeated exposure

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

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 EZEFL0* F103 Surfactant

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name EZEFL0* 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/m ³ STEL 400 ppm TWA 983 mg/m ³ TWA	500ppmSTEL 1230mg/m ³ STEL 400ppmTWA 983mg/m ³ TWA	500 ppm STEL 1230 mg/m ³ STEL 400 ppm TWA 983 mg/m ³ TWA
2-butoxyethanol	25 ppm TWA 121 mg/m ³ TWA	50ppmSTEL 242mg/m ³ STEL 20ppmTWA 96.9mg/m ³ TWA	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/m ³ TWA 500 ppm STEL 1230 mg/m ³ STEL	400 ppm Ceiling 980 mg/m ³ Ceiling 200 ppm ACL
2-butoxyethanol	Not determined	20 ppm TWA	20 ppm Ceiling 97 mg/m ³ 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/m ³ TWA 100 ppm TWA 1225 mg/m ³ STEL 500 ppm STEL	500 ppm STEL 1230 mg/m ³ STEL 400 ppm TWA 983 mg/m ³ TWA
2-butoxyethanol	5 mg/m ³ MAC	Not determined	25 ppm TWA 121 mg/m ³ 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/m ³ TWA	400 ppm TWA 980 mg/m ³ TWA	10 mg/m ³ TWA 50 mg/m ³ MAC
2-butoxyethanol	20 ppm TWA 96.7 mg/m ³ TWA Skin notation*3)	skin - potential for cutaneous absorption 50 ppm TWA 240 mg/m ³ TWA	5 mg/m ³ 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/m ³ STEL Skin*2) 20 ppm TWA 98 mg/m ³ 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**Respiratory protection**Be aware that liquid may penetrate the gloves. Frequent change is advisable.
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 mm ² /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 effects 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/m ³ (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

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

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Safety Data Sheet

SDS no. F110

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/m ³ STEL 200 ppm TWA 262 mg/m ³ TWA	250ppmSTEL 328mg/m ³ STEL 200ppmTWA 262mg/m ³ TWA	250 ppm STEL 325 mg/m ³ STEL Skin designation 200 ppm TWA 260 mg/m ³ 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/m ³ STEL 200 ppm TWA 260 mg/m ³ TWA	200 ppm TWA Skin notation 250 ppm STEL	May cause substantial skin absorption 200 ppm ACL 200 ppm OEL 260 mg/m ³ 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/m ³ TWA 200 ppm TWA Skin notation 325 mg/m ³ STEL 250 ppm STEL	250 ppm STEL 328 mg/m ³ STEL 200 ppm TWA 262 mg/m ³ 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/m ³ TWA	200 ppm TWA 260 mg/m ³ TWA	5 mg/m ³ TWA 15 mg/m ³ 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/m ³ TWA 100 mg/m ³ STEL	Skin 200 ppm TWA 260 mg/m ³ 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



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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 (CO₂), 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	150ppmTWA total vapour and particulates 474mg/m ³ TWA total vapour and	Not determined

		particulates 10mg/m ³ TWAparticulates 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/m ³ MAC	Not determined	150 ppm TWA 474 mg/m ³ TWA 10 mg/m ³ 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/m ³ 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

SDS no. D606

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 (CO₂), 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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/cm ³
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, CO₂, 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.



Respiratory protection	Break through time >480 minutes Glove thickness >0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable. 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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

Disclaimer

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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/m ³ TWA 3 mg/m ³ TWA 2 mg/m ³ TWA	2mg/m ³ TWArespirable dust	Not determined
Chemical Name	India	Indonesian	Japan
Fumed silica	Not determined	2 mg/m ³ TWA	Not determined
Chemical Name	Kazakhstan	Kuwait	New Zealand
Fumed silica	Not determined	Not determined	2 mg/m ³ TWA
Chemical Name	Malaysia	Philippines	Russia
Fumed silica	2 mg/m ³ 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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

SDS no. D182

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, CO₂, 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 (CO_x), 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



<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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

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



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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/m ³ TWA	50ppmSTEL 242mg/m ³ STEL 20ppmTWA 96.9mg/m ³ TWA	Not determined
Chemical Name	India	Indonesian	Japan
2-butoxyethanol	Not determined	20 ppm TWA	20 ppm Ceiling 97 mg/m ³ Ceiling May cause substantial skin absorption 25 ppm ACL
Chemical Name	Kazakhstan	Kuwait	New Zealand
2-butoxyethanol	5 mg/m ³ MAC	Not determined	25 ppm TWA 121 mg/m ³ TWA Possibility of significant uptake through the skin*1)
Chemical Name	Malaysia	Philippines	Russia
2-butoxyethanol	20 ppm TWA 96.7 mg/m ³ TWA Skin notation*3)	skin - potential for cutaneous absorption 50 ppm TWA 240 mg/m ³ TWA	5 mg/m ³ MAC
Chemical Name	Thailand	Vietnam	Turkey
2-butoxyethanol	50 ppm TWA	Not determined	50 ppm STEL 246 mg/m ³ STEL Skin*2) 20 ppm TWA 98 mg/m ³ 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 protectionWear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile Butyl rubber Neoprene

Respiratory protection	Break through time >480 minutes Glove thickness 0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable. 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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	No information available	
(n-octanol/water)		
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, CO₂, 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 (CO_x), 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

Hand protection	Tightly fitting safety goggles Safety glasses with side-shields
Respiratory 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 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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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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/m ³ TWA	0.05mg/m ³ TWArespirable dust	Not determined
Respirable Crystalline Silica (Quartz)	0.1 mg/m ³ TWA	0.05mg/m ³ TWArespirable dust	Not determined
Chemical Name	India	Indonesian	Japan
Quartz, Crystalline silica	Not determined	0.025 mg/m ³ TWA	0.03 mg/m ³ OEL
Respirable Crystalline Silica (Quartz)	Not determined	0.025 mg/m ³ TWA	0.03 mg/m ³ OEL
Chemical Name	Kazakhstan	Kuwait	New Zealand

Quartz, Crystalline silica	1 mg/m ³ MAC	0.1 mg/m ³ TWA	0.05 mg/m ³ TWA Confirmed carcinogen
Respirable Crystalline Silica (Quartz)	1 mg/m ³ MAC	0.1 mg/m ³ TWA	0.05 mg/m ³ TWA Confirmed carcinogen
Chemical Name	Malaysia	Philippines	Russia
Quartz, Crystalline silica	0.1 mg/m ³ TWA	Not determined	1 mg/m ³ TWA 3 mg/m ³ 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/m ³ TWA	Not determined	1 mg/m ³ TWA 3 mg/m ³ 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/m ³ TWA	Not determined	Not determined
Respirable Crystalline Silica (Quartz)	0.025 mg/m ³ 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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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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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, CO₂, 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 (CO_x), 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/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



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/m ³ MAC	Not determined	Not determined
Chemical Name	Malaysia	Philippines	Russia
Sodium sulfate (Impurity)	Not determined	Not determined	10 mg/m ³ 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.
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Skin and body protection**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



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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 mediaWater spray, dry chemical, carbon dioxide (CO₂), 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 productsFire or high temperatures create: Nitrogen oxides (NO_x), 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

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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/cm ³ @ 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

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

SDS no. D167A

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 (CO₂), 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/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
2-methylpropan-2-ol (impurity)	100 ppm TWA 303 mg/m ³ TWA	150ppmSTEL 455mg/m ³ STEL 100ppmTWA 303mg/m ³ TWA	100 ppm TWA 303 mg/m ³ TWA
Chemical Name	India	Indonesian	Japan
2-methylpropan-2-ol (impurity)	Not determined	100 ppm TWA 303 mg/m ³ TWA	50 ppm OEL 150 mg/m ³ OEL
Chemical Name	Kazakhstan	Kuwait	New Zealand
2-methylpropan-2-ol (impurity)	10 mg/m ³ MAC	Not determined	150 ppm STEL 455 mg/m ³ STEL

			100 ppm TWA 303 mg/m ³ TWA
Chemical Name	Malaysia	Philippines	Russia
2-methylpropan-2-ol (impurity)	100 ppm TWA 303 mg/m ³ TWA	100 ppm TWA 300 mg/m ³ TWA	10 mg/m ³ 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	
<u>Property</u>	<u>Values</u>	<u>Remarks</u>
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.	
<u>9.2 Other information</u>		
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

Disclaimer

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Chemical Disclosure

CHEMICAL DISCLOSURE FOR BURU ENERGY

A. SYSTEM DETAILS:

OPERATOR:	Buru Energy
PROJECT / WELL:	Ungani
SYSTEM:	Produced Water Reinjection
TOTAL VOLUME OF SYSTEM:	Approx. 1,000 kL/day

B. PRODUCT LIST:

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
SCAL16109A	Champion X	Scale Inhibitor	This product contains organic components. ACUTE TOXICITY: Acute oral toxicity of component: LD50 rat: 4,164 mg/kg Acute dermal toxicity of component: LD50 rabbit: >5,050 mg/kg Based on hazard characterization, the potential human hazard is: low. ECOLOGICAL TOXICITY: The product has no known ecotoxicological effects. Toxicity from component: Toxicity to daphnia and other aquatic invertebrates: EC50: 110 mg/L (48h) PERSISTENCE AND DEGRADABILITY: No data available. MOBILITY: No data available. BIOACCUMULATIVE POTENTIAL: No data available. CHRONIC TOXICITY No known carcinogenic, chronic, mutagenic or reproductive effects. 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.	0.0010%	Yes
CORR11447A	Champion X	Corrosion Inhibitor	This product contains organic components. Chronic Exposure: Health injuries are not known or expected under normal use ACUTE TOXICITY: Acute oral toxicity: >2,000 mg/kg	0.0030%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Acute inhalation toxicity: >20 mg/L (4h) (vapour) Acute dermal toxicity: >2,000 mg/kg Skin corrosion/irritation: rabbit 1-4h after 1-4h of exposure <u>ECOLOGICAL TOXICITY:</u> Toxicity from product: Toxicity to fish: LC50 Danio rerio (zebra fish): 10.6 mg/L (96h) No other data available Toxicity from components: Toxicity to daphnia and other aquatic invertebrates: Tall Oil, DETA Imidazoline Acetates EC50: 0.72 mg/L (48h) Benzyl-(C12-C18 Linear Alkyl)-Dimethyl-Ammonium Chloride EC50 : 0.47 mg/L 2-Mercaptoethanol EC50 Daphnia magna (Water flea): 0.4 mg/L (48h) Methanol EC50: > 10,000 mg/L (48 h) Toxicity to algae: Tall Oil, DETA Imidazoline Acetates EC50 : 0.17 mg/L (72 h) Benzyl-(C12-C18 Linear Alkyl)-Dimethyl-Ammonium Chloride NOEC : 0.009 mg/L 2-Mercaptoethanol EC50 Desmodesmus subspicatus (Scenedesmus subspicatus): 19 mg/L (72 h) Methanol EC50 : 22,000 mg/L (72 h) Toxicity to bacteria: Tall Oil, DETA Imidazoline Acetates 175 mg/L Methanol > 1,000 mg/L Methanol NOEC: 7,900 mg/L (Exposure time: 8.3 days) <u>CHRONIC TOXICITY:</u> Toxicity to fish (Chronic toxicity): Methanol NOEC: 7,900 mg/L (Exposure time: 8.3 days) Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): 2-Mercaptoethanol NOEC: 0.063 mg/L (Exposure time: 21 days), species: Daphnia magna (Water flea) 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.		

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			No mutagenic or reproductive effects. <u>PERSISTENCE AND DEGRADABILITY:</u> No data available. <u>MOBILITY:</u> The environmental fate was estimated using level III fugacity mathematical models developed by the US EPA. The model assumes a steady state condition where the total input and output have equilibrated. 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. Air: <5% Water: 30 - 50% Soil : 50 - 70% <u>BIOACCUMULATIVE POTENTIAL:</u> No data available.		
BIOC16733A	ChampionX	Biocide	<u>Chronic Toxicity:</u> Suspected of damaging fertility or the unborn child. 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. <u>Toxicity:</u> Toxic to aquatic life with long lasting effects. Harmful to aquatic life. <u>Toxicity to fish :</u> 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 <u>Toxicity to daphnia and other aquatic invertebrates:</u> EC50 Daphnia magna (Water flea): 19.4 mg/l; Exposure time: 48 hrs; Test substance: 75% Active Ingredient <u>Toxicity to algae:</u> LC50 Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum): 0.20 mg/l; Exposure time: 96 hrs; Test substance: 75% Active Ingredient <u>Toxicity to bacteria:</u> EC50 Bacteria: 24 mg/l; Exposure time: 3 hrs; Test substance: 75% Active Ingredient	0.0011%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			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		
EMBR12034A	ChampionX	Emulsion Breaker	This product contains organic components. AQUATIC TOXICOLOGY COMPONENT 1 (30 – 60% concentration) <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: >1000* mg/L <i>*Estimated data based on structural analogue</i> COMPONENT 2 (10 – 30% concentration) tingenc <i>Daphnia magna</i> (Marine invertebrate) EC50 48 hrs: 24500 mg/L <i>Oncorhynchus mykiss (rainbow trout)</i> (Marine fish) LC50 96 hrs: 19000 mg/L COMPONENT 3 (10 – 30% concentration) <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 114 mg/L <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 29.2 mg/L <i>Cyprinodon variegatus (sheepshead minnow)</i> (Marine fish) LC50 96 hrs: >1000 mg/L COMPONENT 4 (5 – 10% concentration) <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 165 mg/L <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 360 mg/L <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: 811 mg/L	0.0042%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			COMPONENT 5 (5 – 10% concentration) <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 0.5 mg/L <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 119 mg/L <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: 148 mg/L CHEMICAL FATE COMPONENT 1 (30 – 60% concentration) Log Pow 4.4 COMPONENT 2 (10 – 30% concentration) Log Pow <1 COMPONENT 3 (10 – 30% concentration) Log Pow 3.5 – 5.1 COMPONENT 4 (5 – 10% concentration) Log Pow 4.66 COMPONENT 5 (5 – 10% concentration) Log Pow 4.7 ENVIRONMENTAL FATE COMPONENT 1 (30 – 60% concentration) Biodegradability, 28 days: 15% COMPONENT 2 (10 – 30% concentration) Biodegradability, 3 days: 83-91% COMPONENT 3 (10 – 30% concentration) Biodegradability, 28 days: 29% COMPONENT 4 (5 – 10% concentration) Biodegradability, 28 days: 70% COMPONENT 5 (5 – 10% concentration) Biodegradability, 28 days: 21% ACUTE MAMMALIAN TOXICITY COMPONENT 1 (30 – 60% concentration) No scientific data or research is available for this component. COMPONENT 2 (10 – 30% concentration) Rat LD50 (oral): 5628 mg/kg Rabbit LD50 (dermal): 15800* mg/kg Rat LC50 (inhalation) 4 hr: 64000 ppm COMPONENT 3 (10 – 30% concentration) Rat LD50 (oral): >5000 mg/kg Rabbit LD50 (dermal): >2000 mg/kg		

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Rat LC50 (inhalation) 4h: >5 mg/L COMPONENT 4 (5 – 10% concentration) Rat LD50 (oral): >5000 mg/kg COMPONENT 5 (5 – 10% concentration) No scientific data or research is available for this component. CHRONIC TOXICITY COMPONENT 1 (30 – 60% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects. COMPONENT 2 (10 – 30% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects. COMPONENT 3 (10 – 30% concentration) May cause genetic defects. May cause cancer. COMPONENT 4 (5 – 10% concentration) Suspected of causing cancer. COMPONENT 5 (5 – 10% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects.		
Bore Water	N/A (from Company bore)	Water	Natural product – exempt under the Chemical Disclosure Guidelines	~ 99.9907%	N/A
TOTAL				100%	
HSCV19356A	ChampionX	Hydrogen Sulfide Scavenger	This product contains organic components. AQUATIC TOXICOLOGY COMPONENT 1 (70 – 100% concentration) Natural product – exempt under the Chemical Disclosure Guidelines COMPONENT 2 (25 – 30% concentration) - Toxicity to fish: LC50 : > 1.908 mg/L (96h) - Toxicity to daphnia and other aquatic invertebrates: LC50 : 20.352 mg/L (48h) - Toxicity to algae: EC50 : 1.145 mg/L (72h) CHEMICAL FATE COMPONENT 1 (70 – 100% concentration) Natural product – exempt under the Chemical Disclosure Guidelines COMPONENT 2 (25 – 30% concentration) Log Pow < 3 ENVIRONMENTAL FATE COMPONENT 1 (70 – 100% concentration)	Contingency, 0.003%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Natural product – exempt under the Chemical Disclosure Guidelines COMPONENT 2 (25 – 30% concentration) The organic portion of this preparation is expected to be inherently biodegradable. 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: 50 - 70% Soil: 30 - 50% The portion in water is expected to be soluble or dispersible. This preparation or material is not expected to bioaccumulate. ACUTE MAMMALIAN TOXICITY COMPONENT 1 (70 – 100% concentration) Natural product – exempt under the Chemical Disclosure Guidelines COMPONENT 2 (25 – 30% concentration) Acute toxicity estimate: 1,786 mg/kg CHRONIC TOXICITY COMPONENT 1 (70 – 100% concentration) Natural product – exempt under the Chemical Disclosure Guidelines COMPONENT 2 (25 – 30% concentration) Repeat exposure: May cause damage to organs through prolonged or repeated exposure if swallowed. 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. No mutagenic, carcinogenic or reproductive effects.		
ACPC19610A	ChampionX	Cleaner	This product contains organic components. AQUATIC TOXICOLOGY COMPONENT 1 (100% concentration)	Contingency, 0.4%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			○ <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 1100 mg/L ○ <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 1195 mg/L ○ <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: 2100 mg/L CHEMICAL FATE ● COMPONENT 1 (100% concentration) Log Pow 1.6 ENVIRONMENTAL FATE ● COMPONENT 1 (100% concentration) Biodegradability, 28 days: 67.5% ACUTE MAMMALIAN TOXICITY ● COMPONENT 1 (100% concentration) Rat LD50 (oral): 1500 mg/kg CHRONIC TOXICITY ● COMPONENT 1 (100% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects.		
NAPH22211A	ChampionX	Demulsifier	This product contains organic components. AQUATIC TOXICOLOGY ● COMPONENT 1 (30 – 60% concentration) ○ <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 375 mg/L ○ <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 439 mg/L ○ <i>Cyprinodon variegatus (sheepshead minnow)</i> (Marine fish) LC50 96 hrs: 51.43 mg/L ● COMPONENT 2 (10 – 30% concentration) ○ <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: < 0.5 mg/L ○ <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 119 mg/L ○ <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: 148 mg/L ● COMPONENT 3 (5 – 10% concentration) ○ <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 610 mg/L ○ <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 534 mg/L ○ <i>Cyprinodon variegatus (sheepshead minnow)</i> (Marine fish) LC50 96 hrs: 550 mg/L CHEMICAL FATE ● COMPONENT 1 (30 – 60% concentration)	0.0042%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Log Pow 4.6 COMPONENT 2 (10 – 30% concentration) Log Pow 4.73 COMPONENT 3 (5 – 10% concentration) Log Pow > 3 ENVIRONMENTAL FATE COMPONENT 1 (30 – 60% concentration) Biodegradability, 28 days: 86% COMPONENT 2 (10 – 30% concentration) Biodegradability, 28 days: 17% COMPONENT 3 (5 – 10% concentration) Biodegradability, 28 days: 11% ACUTE MAMMALIAN TOXICITY COMPONENT 1 (30 – 60% concentration) Rat LD50 (oral): > 5,000 mg/kg COMPONENT 2 (10 – 30% concentration) No data available COMPONENT 3 (5 – 10% concentration) No data available CHRONIC TOXICITY COMPONENT 1 (30 – 60% concentration) Suspected of causing cancer. COMPONENT 2 (10 – 30% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects. COMPONENT 3 (5 – 10% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects.		
HSUR43670A / Hydrosure O-3670R	ChampionX	Hydrotest Chemical	This product contains organic components. AQUATIC TOXICOLOGY COMPONENT 1 (10 – 30% concentration) <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: 0.26 mg/L <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: 0.4 mg/L <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: 1.7 mg/L COMPONENT 2 (10 – 30% concentration)	Contingency, <0.1%	Yes

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			○ PLONOR • COMPONENT 3 (5 – 10% concentration) ○ <i>Skeletonema costatum</i> (Marine algae) EC50 72 hrs: >2000 mg/L ○ <i>Acartia tonsa</i> (Marine invertebrate) LC50 48 hrs: >2000 mg/L ○ <i>Scophthalmus maximus</i> (Marine fish) LC50 96 hrs: >1800 mg/L • COMPONENT 4 (5 – 10% concentration) ○ PLONOR CHEMICAL FATE • COMPONENT 1 (10 – 30% concentration) Log Pow 2.28 (theoretical) • COMPONENT 2 (10 – 30% concentration) PLONOR • COMPONENT 3 (5 – 10% concentration) Log Pow 1.05 • COMPONENT 4 (5 – 10% concentration) PLONOR ENVIRONMENTAL FATE • COMPONENT 1 (10 – 30% concentration) Biodegradability, 28 days: 34% • COMPONENT 2 (10 – 30% concentration) PLONOR • COMPONENT 3 (5 – 10% concentration) Biodegradability, 28 days: 76% • COMPONENT 4 (5 – 10% concentration) PLONOR ACUTE MAMMALIAN TOXICITY • COMPONENT 1 (10 – 30% concentration) Rat LD50 (oral): 344 mg/kg Rabbit LD50 (dermal): 3340 mg/kg Rat LC50 (inhalation) 4h: >0.054 mg/L • COMPONENT 2 (10 – 30% concentration) Rat LD50 (oral): >2000 mg/kg (25% active ingredient in water) Rat LD50 (dermal): >2000 mg/kg (20% active ingredient in water)		

Chemical Disclosure

Product Name	Supplier	Purpose	Toxicity, Ecotoxicity & Biodegradability data**	% Product in system fluid	SDS Attached
			Rat LC50 (inhalation) 4h: >5.5 mg/L COMPONENT 3 (5 – 10% concentration) Guinea pig LD50 (oral): >5000 mg/kg (50% active ingredient in vehicle)* Rabbit LD50 (dermal): 9510 mg/kg* <i>*Literature data from ECHA</i> COMPONENT 4 (5 – 10% concentration) Rat LD50 (oral): 7712 mg/kg* Rabbit LD50 (dermal): 10600 mg/kg <i>*Literature data from ECHA</i> CHRONIC TOXICITY COMPONENT 1 (10 – 30% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects. COMPONENT 2 (10 – 30% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects. COMPONENT 3 (5 – 10% concentration) No known carcinogenic, mutagenic or reproductive effects. May cause damage to organs for repeated dose (oral route). COMPONENT 4 (5 – 10% concentration) No known carcinogenic, chronic, mutagenic or reproductive effects.		

** With reference to biodegradation, where a Product is organic than Contractor must state as such in this column

C. CHEMICAL LIST

Chemical List (Chemicals within fluid system identified in the table above)

Chemicals Name	CAS Number	Mass Fraction (%)
WATER	7732-18-5	99.99396554 %
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE	55566-30-8	0.0025 %
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	64742-94-5	0.00205 %
NAPHTHALENE	91-20-3	0.00027 %
1,2,4-TRIMETHYLBENZENE	95-63-6	0.000062 %
C12-16 ALKYL BENZYL DIMETHYLAMMONIUM CHLORIDE	68424-85-1	0.00085 %
TALL OIL, DETA IMIDAZOLINE ACETATES	68140-11-4	0.0002 %
BENZYL-(C12-C18 LINEAR ALKYL)-DIMETHYL-AMMONIUM CHLORIDE	68391-01-5	0.000001 %

Chemical Disclosure

Chemicals Name	CAS Number	Mass Fraction (%)
2-MERCAPTOETHANOL	60-24-2	0.0000008 %
METHANOL	67-56-1	0.0000007 %
BISHEXAMETHYLENETRIAMINE, PENTAMETHYLENEPENTAPHOSPHONIC ACID	34690-00-1	0.0001 %
TOTAL	-	100 %
2-BUTOXYETHANOL	111-76-2	Contingency, 0.4 %
WATER	7732-18-5	Contingency, 0.56375 %
HEXAHYDRO-1,3,5-TRIMETHYL-S-TRIAZINE	108-74-7	Contingency, 0.00084 %
MONOMETHYLAMINE	74-89-5	Contingency, 0.00001 %
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	64742-94-5	Contingency, 0.00272 %
HYDROTREATED HEAVY NAPHTHA	64742-48-9	Contingency, 0.00108 %
METHANOL	67-56-1	Contingency, 0.00050 %
ETHYLBENZENE	100-41-4	Contingency, 0.000075 %
XYLENE	1330-20-7	Contingency, 0.000075 %
NAPHTHALENE	91-20-3	Contingency, 0.000060 %
1,2,4-TRIMETHYLBENZENE	95-63-6	Contingency, 0.00001 %
TOLUENE	108-88-3	Contingency, 0.00001 %
ACETIC ACID	64-19-7	Contingency, 0.00002 %
BENZYL-(C12-C16 LINEAR ALKYL)-DIMETHYL-AMMONIUM CHLORIDE	68424-85-1	Contingency, 0.2037 %
AMMONIUM BISULFITE	10192-30-0	Contingency, 0.1337 %
DIPROPYLENE GLYCOL MONOMETHYL ETHER	34590-94-8	Contingency, 0.0501 %
ETHYLENE GLYCOL	107-21-1	Contingency, 0.0509 %
NICKEL SULPHATE	7786-81-4	Contingency, <0.00001 %

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ACPC19610A

Other means of identification : Not applicable.

Recommended use : CLEANER

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 : 13.08.2021

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : Combustible liquid
Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye irritation.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ eye protection/ face protection. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product.
Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.

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IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician 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. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/ attention. Wash contaminated clothing before reuse. Take off contaminated clothing and wash it before reuse.

Storage:

Store in a well-ventilated place. Keep cool.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Substance

Chemical Name	CAS-No.	Concentration: (%)
2-Butoxyethanol	111-76-2	60 - 100

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.

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.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.

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.

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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
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : 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.

Section: 6. ACCIDENTAL RELEASE MEASURES

- 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 : Avoid contact with skin and eyes. 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 : The following compatibility data is suggested based on similar product data and/or industry experience: Teflon (PTFE), Kalrez, Perfluoroelastomer, TFE, HDPE (high density polyethylene), Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, MDPE (medium density polyethylene)
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Neoprene, Ethylene propylene, Polypropylene, Polyethylene, Nitrile, Plexiglass, EPDM, Alfax, Brass, Nylon, PVC, Buna-N, Natural rubber, Polyurethane, Fluoroelastomer, Chlorosulfonated polyethylene rubber

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
2-Butoxyethanol	111-76-2	TWA	20 ppm 96.9 mg/m ³	AU OEL
		VLE	50 ppm 242 mg/m ³	AU OEL
2-Butoxyethanol	111-76-2	WES-TWA	25 ppm 121 mg/m ³	NZ OEL
2-Butoxyethanol	111-76-2	TWA	20 ppm	ACGIH
		TWA	5 ppm 24 mg/m ³	NIOSH REL
		TWA	50 ppm 240 mg/m ³	OSHA Z1
2-Butoxyethanol				

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 the following personal protective equipment:
Butyl gloves
Nitrile gloves
Gloves should be replaced immediately if signs of degradation are observed.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.

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.

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 : Colorless
Odour : Glycol Ether
Flash point : 71 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH : no data available
Odour Threshold : no data available
Melting point/freezing point : Freezing Point: -71 °C, ASTM D-1177

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Initial boiling point and boiling range : 171 °C, (760 mm Hg), Method: ASTM D 86

Evaporation rate : no data available

Flammability (solid, gas) : Not applicable.

Upper explosion limit : 10.6 V%

Lower explosion limit : 1.1 V%

Vapour pressure : 0.6 mm Hg, (20 °C), ASTM D 323,

Relative vapour density : 1(Air = 1)

Relative density : 0.89 - 0.91, (16 °C), ASTM D-1298

Density : 7.4 - 7.6 lb/gal

Water solubility : completely soluble

Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : 244 °C

Thermal decomposition : no data available

Viscosity, dynamic : no data available

Viscosity, kinematic : 2.53 mm²/s (38 °C)

Molecular weight : no data available

VOC : no data available

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 : Strong oxidizing agents

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye irritation.

Skin : Harmful in contact with skin. Causes skin irritation.

Ingestion : Harmful if swallowed.

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Inhalation : Harmful if inhaled.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Irritation

Skin contact : Redness, Irritation, slight irritation

Ingestion : Vomiting

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 1,500 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate: 1,100 mg/kg

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 : No toxicity to reproduction

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: Moderate

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Bluegill Sunfish: > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Inland Silverside: > 1,000 mg/l

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Exposure time: 96 hrs
Test substance: Product

LC50 Mosquito Fish (*Gambusia* spp.): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 *Acartia tonsa*: 730 mg/l
Exposure time: 48 hrs
Test substance: Product

Toxicity to algae : EC50 Marine Algae (*Skeletonema costatum*): 109 mg/l
Exposure time: 72 hrs
Test substance: Product

Components

Toxicity to bacteria : 2-Butoxyethanol
EC50 : 463 mg/l

Components

Toxicity to fish (Chronic toxicity) : 2-Butoxyethanol
NOEC: > 100 mg/l
Exposure time: 21 d

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2-Butoxyethanol
NOEC: > 100 mg/l
Exposure time: 21 d

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 : 50 - 70%
Soil : 30 - 50%

The portion in water is expected to float on the surface.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

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ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Low

Section: 13. DISPOSAL CONSIDERATIONS

- Disposal methods : 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 : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

- Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

- Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

- Standard for the Uniform Scheduling of Medicines and Poisons : Schedule 6

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

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)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

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).

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)

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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).

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).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

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 : 13.08.2021
Version Number : 1.3
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.

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

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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

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
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 media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.

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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

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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.

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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

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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

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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

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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 : Schedule 6
Scheduling of Medicines and Poisons

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)

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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.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CORR11447A

Other means of identification : Not applicable.

Recommended use : CORROSION INHIBITOR

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 : 06.10.2024

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin corrosion/irritation : Sub-category 1C

Serious eye damage/eye irritation : Category 1

Skin sensitization : Category 1

GHS Label element

Hazard pictograms :  

Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Precautionary Statements : **Prevention:**
Avoid breathing mist or vapours. Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
Response:
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 : The headspace of containers and manufacturing equipment containing this

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product may accumulate hydrogen sulfide (H₂S) gas. Attach or wear a H₂S monitor before opening containers and using or transferring this product. Containers should only be opened in well-ventilated areas. Avoid breathing vapors from the headspace of newly opened containers.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
Tall Oil, DETA Imidazoline Acetates	68140-11-4	5 - 10
Benzyl-(C12-C18 Linear Alkyl)-Dimethyl-Ammonium Chloride	68391-01-5	3 - 5
2-Mercaptoethanol	60-24-2	1 - 3
Methanol	67-56-1	0.1 - 1

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. 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 if symptoms occur.
- 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 : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion : Carbon oxides nitrogen oxides (NO_x) Sulphur oxides Hydrogen chloride

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products

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.

Hazchem Code : 2X

SECTION 6. ACCIDENTAL RELEASE MEASURES

Initial Emergency Response Guide No : 37

Personal precautions, protective equipment and emergency procedures : A respirator and monitor suitable for H₂S may be necessary in the event of a spill in a confined area. Ensure adequate ventilation. 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 : 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. Do not flush into surface water or sanitary sewer system.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Hydrogen sulfide gas may accumulate in the headspace of containers during storage. Containers should be opened cautiously and only in well-ventilated areas. Exercise care to avoid exposure to vapors from totes or IBCs when loosening the cap. Use the container bottom valve to perform product transfers. Do not breathe dust, fume, gas, mist, vapours or spray. Do not get in eyes, on skin, or on clothing. Do not ingest. Wash face, hands and any exposed skin thoroughly after handling.

Conditions for safe storage : Keep container tightly closed. Store in suitable labelled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : not determined

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Methanol	67-56-1	TWA	200 ppm 262 mg/m ³	AU OEL

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		VLE	250 ppm 328 mg/m3	AU OEL
Methanol	67-56-1	WES-TWA	200 ppm 262 mg/m3	NZ OEL
		WES-STEEL	250 ppm 328 mg/m3	NZ OEL
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m3	NIOSH REL
		ST	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z-1

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
METHANOL	67-56-1	methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

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
Viton® gloves
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 suitable protective clothing.

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne vapour and mist.
Respiratory protection for hydrogen sulfide is not expected to be necessary in well-ventilated areas. However, if after a thorough hazard assessment respiratory protection is deemed necessary, an appropriate H2S respirator must be used.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Multi-purpose combination filter.

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In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.

Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Remove and wash contaminated clothing before re-use. 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	: amber
Odour	: hydrocarbon-like
Flash point	: > 93.3 °C, Method: closed cup
pH	: 4.5,(100 %)
Odour Threshold	: no data available
Melting point/freezing point	: POUR POINT: -6 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.9830 - 1.0230, (15.6 °C),
Density	: 0.994 g/cm ³ , 8.3 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	: < 10 mPa.s (20 °C) < 10 mPa.s (40 °C)
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: 3.9 %

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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	: Product is stable; however, 2-Mercaptoethanol (2-ME), a component of this product is made from hydrogen sulfide (H ₂ S). 2-ME contains residual H ₂ S and slowly degrades generating additional H ₂ S which can partition from the liquid into the container headspace. Degradation of 2-ME increases with temperature.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: Oxidizing agents
Hazardous decomposition products	: Hydrogen sulfide (H ₂ S) In case of fire hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x) Sulphur oxides 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.
Ingestion	: Causes digestive tract burns.
Inhalation	: May cause nose, throat, and lung irritation. Causes headache, drowsiness or other effects to the central nervous system.
Chronic Exposure	: Health injuries are not known or expected under normal use.

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

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Acute oral toxicity	: Acute toxicity estimate: > 2,000 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: Acute toxicity estimate: > 2,000 mg/kg
Skin corrosion/irritation	: Species: rabbit Result: Corrosive after 1 to 4 hours of exposure Method: OECD Test Guideline 404 Test substance: Product
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	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Contains no ingredient listed as a mutagen
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
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 : Harmful to aquatic life with long lasting effects.

Product

Toxicity to fish : LC50 Danio rerio (zebra fish): 10.6 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

Components

Toxicity to daphnia and other aquatic invertebrates : Tall Oil, DETA Imidazoline Acetates
EC50 : 0.72 mg/l
Exposure time: 48 h

Benzyl-(C12-C18 Linear Alkyl)-Dimethyl-Ammonium Chloride
EC50 : 0.47 mg/l

2-Mercaptoethanol
EC50 Daphnia magna (Water flea): 0.4 mg/l

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Exposure time: 48 h

Methanol
EC50 : > 10,000 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Tall Oil, DETA Imidazoline Acetates
EC50 : 0.17 mg/l
Exposure time: 72 h

Benzyl-(C12-C18 Linear Alkyl)-Dimethyl-Ammonium Chloride
NOEC : 0.009 mg/l

2-Mercaptoethanol
EC50 Desmodesmus subspicatus (Scenedesmus subspicatus): 19 mg/l
Exposure time: 72 h

Methanol
EC50 : 22,000 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Tall Oil, DETA Imidazoline Acetates
175 mg/l

Methanol
> 1,000 mg/l

Components

Toxicity to fish (Chronic toxicity) : Methanol
NOEC: 7,900 mg/l
Exposure time: 8.3 d

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2-Mercaptoethanol
NOEC: 0.063 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using level III fugacity mathematical models developed by the US EPA. The model assumes a steady state condition where the total input and output have equilibrated. 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.

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

Bioaccumulative potential

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no data available

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 : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name(s): : Quaternary ammonium compounds
UN/ID No. : UN 3265
Transport hazard class(es) : 8
Packing group : III
IERG No : 37
Hazchem Code : 2X

Air transport (IATA)

UN/ID No. : UN 3265
Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name(s) : Quaternary ammonium compounds
Transport hazard class(es) : 8
Packing group : III

Sea transport (IMDG/IMO)

UN/ID No. : UN 3265
Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name(s) : Quaternary ammonium compounds
Transport hazard class(es) : 8
Packing group : III

SECTION 15. REGULATORY INFORMATION

Therapeutic Goods (Poisons : Schedule 6
Standard) Instrument

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INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory.

Australian Inventory of Industrial Chemicals

On the inventory, or in compliance with the inventory

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).

Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory

China Inventory of Existing Chemical Substances

On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory

not determined

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 : 06.10.2024
Version Number : 2.2
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.

SAFETY DATA SHEET

CORR11447A

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.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : EMBR12034A

Other means of identification : Not applicable.

Recommended use : EMULSION BREAKER

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 : 16.03.2022

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 2

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Category 2

Carcinogenicity : Category 2

Specific target organ toxicity : Category 1 (Eyes)

- single exposure

Specific target organ toxicity : Category 3 (Central Nervous System)

- single exposure

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Highly flammable liquid and vapour.
Harmful if swallowed.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.
Causes damage to organs (Eyes).

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Wear

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protective gloves/ eye protection/ face protection. Use personal protective equipment as required.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
Hydrotreated Heavy Naphtha	64742-48-9	20 - 30
Methanol	67-56-1	10 - 20
Heavy Aromatic Naphtha	64742-94-5	5 - 10
Ethylbenzene	100-41-4	1 - 5
Xylene	1330-20-7	1 - 5
Naphthalene	91-20-3	1 - 5
1,2,4-Trimethylbenzene	95-63-6	0.1 - 1
Toluene	108-88-3	0.1 - 1
Acetic Acid	64-19-7	0.1 - 1

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.

If swallowed : Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

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

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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 media	: None known.
Specific hazards during firefighting	: Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Use water spray to cool unopened containers. 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.
Hazchem Code	: ●3YE

Section: 6. ACCIDENTAL RELEASE MEASURES

Initial Emergency Response Guide No	: 14
Personal precautions, protective equipment and emergency procedures	: Ensure adequate ventilation. Remove all sources of ignition. 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	: Open drum carefully as content may be under pressure. 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. Wash hands thoroughly after handling. Use only with adequate ventilation.
Conditions for safe storage	: Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

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Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Stainless Steel 316L, Stainless Steel 304, Aluminum, Hastelloy C-276, Nylon, Teflon (PTFE), Kalrez, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Copper, Buna-N, Natural rubber, Polyethylene, Polypropylene, Plexiglass, Polyurethane, PVC, HDPE (high density polyethylene), Ethylene propylene, EPDM, Neoprene, Viton, Alfax, Hypalon, Viton

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Heavy Naphtha	64742-48-9	TWA	900 mg/m3	AU OEL
Hydrotreated Heavy Naphtha	64742-48-9	WES-TWA	300 ppm 890 mg/m3	NZ OEL
		WES-STEEL	500 ppm 1,480 mg/m3	NZ OEL
Hydrotreated Heavy Naphtha	64742-48-9	TWA	500 ppm 2,000 mg/m3	OSHA Z1
Methanol	67-56-1	TWA	200 ppm 262 mg/m3	AU OEL
		VLE	250 ppm 328 mg/m3	AU OEL
Methanol	67-56-1	WES-TWA	200 ppm 262 mg/m3	NZ OEL
		WES-STEEL	250 ppm 328 mg/m3	NZ OEL
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m3	NIOSH REL
		STEEL	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z1
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m3	OSHA Z1
		TWA	200 mg/m3 (as total hydrocarbon vapor)	ACGIH
Ethylbenzene	100-41-4	VLE	125 ppm 543 mg/m3	AU OEL
		TWA	100 ppm 434 mg/m3	AU OEL
Ethylbenzene	100-41-4	WES-STEEL	125 ppm 543 mg/m3	NZ OEL
		WES-TWA	100 ppm 434 mg/m3	NZ OEL
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL

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		STEL	125 ppm 545 mg/m3	NIOSH REL
		TWA	100 ppm 435 mg/m3	OSHA Z1
Xylene	1330-20-7	TWA	80 ppm 350 mg/m3	AU OEL
		VLE	150 ppm 655 mg/m3	AU OEL
Xylene	1330-20-7	WES-TWA	50 ppm 217 mg/m3	NZ OEL
Xylene	1330-20-7	TWA	100 ppm 435 mg/m3	OSHA Z1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm 52 mg/m3	AU OEL
		VLE	15 ppm 79 mg/m3	AU OEL
Naphthalene	91-20-3	WES-TWA	0.5 ppm 2.6 mg/m3	NZ OEL
		WES-STEL	2 ppm 10 mg/m3	NZ OEL
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m3	NIOSH REL
		STEL	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 123 mg/m3	AU OEL
1,2,4-Trimethylbenzene	95-63-6	WES-TWA	25 ppm 123 mg/m3	NZ OEL
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m3	NIOSH REL
		TWA	25 ppm	ACGIH
Toluene	108-88-3	VLE	150 ppm 574 mg/m3	AU OEL
		TWA	50 ppm 191 mg/m3	AU OEL
Toluene	108-88-3	WES-TWA	50 ppm 188 mg/m3	NZ OEL
Toluene	108-88-3	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m3	NIOSH REL
		STEL	150 ppm 560 mg/m3	NIOSH REL
		TWA	200 ppm	OSHA/Z2
		CEIL	300 ppm	OSHA/Z2
		Peak	500 ppm	OSHA/Z2
Acetic Acid	64-19-7	VLE	15 ppm 37 mg/m3	AU OEL
		TWA	10 ppm 25 mg/m3	AU OEL
Acetic Acid	64-19-7	WES-TWA	10 ppm 25 mg/m3	NZ OEL
		WES-STEL	15 ppm	NZ OEL

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			37 mg/m3	
Acetic Acid	64-19-7	TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
		STEL	15 ppm 37 mg/m3	NIOSH REL
		TWA	10 ppm 25 mg/m3	NIOSH REL
		TWA	10 ppm 25 mg/m3	OSHA Z1

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.
Viton® gloves
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 suitable 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.
When significant vapours are generated, an approved air purifying respirator is recommended to supplement other control measures for short term exposure.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Multi-purpose combination filter
Methanol Warning! Protection provided by air purifying respirators is limited due to methanol's ability to break through filter media and its poor warning properties. For prolonged exposures, entry into unknown environments or where methanol is suspected to exceed exposure limits, use a positive pressure, full-facepiece SCBA or supplied-air respirator.

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.

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

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	light yellow
Odour	: hydrocarbon-like
Flash point	: 11 °C, Method: ASTM D 56, Tag closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: POUR POINT: -34.3 °C, <
Initial boiling point and boiling range	: 65 °C, Method: ASTM D 86
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 194.4 hPa, (37.8 °C), ASTM D-5191,
Relative vapour density	: no data available
Relative density	: 0.96, (15.6 °C),
Density	: 8 lb/gal
Water solubility	: dispersible
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	: no data available
Viscosity, kinematic	: 50 mm ² /s (40 °C)
Molecular weight	: no data available
VOC	: no data available

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 oxidizing agents
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides

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Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Health injuries are not known or expected under normal use.

Skin : Causes skin irritation.

Ingestion : Harmful if swallowed. May be fatal if swallowed and enters airways. Causes digestive tract burns.

Inhalation : May cause drowsiness or dizziness. May cause nose, throat, and lung irritation.

Chronic Exposure : Causes damage to organs. Suspected of causing cancer.

Experience with human exposure

Eye contact : No symptoms known or expected.

Skin contact : slight irritation

Ingestion : Vomiting, Abdominal pain

Inhalation : Respiratory irritation, Cough, Dizziness, Drowsiness

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 821.26 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

Reproductive effects : No reproductive toxic effects expected.

Germ cell mutagenicity : Contains no ingredient listed as a mutagen

Teratogenicity : no data available

STOT - single exposure : May cause drowsiness or dizziness. Causes damage to organs.

STOT - repeated exposure : no data available

Aspiration toxicity : May be fatal if swallowed and enters airways.

Human Hazard Characterization

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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.

Product

Toxicity to fish : LC50 Fish: 1 - 10 mg/l
Exposure time: 96 hrs
Test substance: Product (estimated)

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna: 1 - 10 mg/l
Exposure time: 48 hrs
Test substance: Product (estimated)

Toxicity to algae : no data available

Components

Toxicity to algae : Methanol
EC50 : 22,000 mg/l
Exposure time: 72 h

Toluene
EC50 *Chlorella vulgaris* (Fresh water algae): 134 mg/l
Exposure time: 72 h

Acetic Acid
EC50 *Skeletonema costatum* (marine diatom): > 1,000 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Methanol
> 1,000 mg/l

Toluene
84 mg/l
EC50 *Nitrosomonas* Sp.: 84 mg/l
Exposure time: 24 h

Components

Toxicity to fish (Chronic toxicity) : Hydrotreated Heavy Naphtha
NOEC: 2.6 mg/l
Exposure time: 14 d
Species: *Pimephales promelas* (fathead minnow)

Methanol
NOEC: 7,900 mg/l
Exposure time: 8.3 d

Toluene
NOEC: 1.39 mg/l
Exposure time: 40 d
Species: *Oncorhynchus kisutch* (coho salmon)

Components

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Hydrotreated Heavy Naphtha
NOEC: 2.6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Toluene
NOEC: 0.74 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia

Persistence and degradability

no data available

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 : 10 - 30%
Water : 10 - 30%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

no data available

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

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Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s): : Methanol, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : II
IERG No : 14
Hazchem Code : ●3YE

Air transport (IATA)

UN/ID No. : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Methanol, Ethylbenzene
Transport hazard class(es) : 3
Packing group : II

Sea transport (IMDG/IMO)

UN/ID No. : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Methanol, Ethylbenzene
Transport hazard class(es) : 3
Packing group : II
Marine pollutant : Naphthalene, 1,2,4-Trimethylbenzene

Section: 15. REGULATORY INFORMATION

Standard for the Uniform : Schedule 6
Scheduling of Medicines and
Poisons

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On the inventory, or in compliance with the inventory.

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)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

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).

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).

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).

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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 : 16.03.2022
Version Number : 1.0
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.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : HSCV19356A
Other means of identification : Not applicable.
Recommended use : HYDROGEN SULFIDE SCAVENGER
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 : 27.06.2025

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 4
Acute toxicity (Oral) : Category 4
Skin corrosion/irritation : Sub-category 1C
Serious eye damage/eye irritation : Category 1
Skin sensitization : Category 1
Specific target organ toxicity - repeated exposure : Category 2 (Eyes)

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.
May cause damage to organs (Eyes) through prolonged or repeated exposure.

Precautionary Statements

: **Prevention:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe mist or vapours. Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
Response:
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/

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physician.

Storage:

Store in a well-ventilated place.

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

Hexahydro-1,3,5-Trimethyl-S-Triazine

CAS-No.

108-74-7

Concentration: (%)

25 - 30

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. 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 if symptoms occur.
- 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 media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.

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Flash back possible over considerable distance.

Hazardous combustion products : Carbon oxides nitrogen oxides (NO_x)

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.

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. Do not flush into surface water or sanitary sewer system.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Keep away from fire, sparks and heated surfaces. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only with adequate ventilation. Do not breathe dust, fume, gas, mist, vapours or spray. Do not get in eyes, on skin, or on clothing. Do not ingest. Wash face, hands and any exposed skin thoroughly after handling.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep away from oxidizing agents. 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

Contains no substances with occupational exposure limit values.

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles

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Hand protection	: Face-shield 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. Nitrile rubber butyl-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	: Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
Respiratory protection	: 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: Organic vapour cartridge. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used. Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Remove and wash contaminated clothing before re-use. 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	: colourless
Odour	: Pungent
Flash point	: 90 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: 11,(100 %)
Odour Threshold	: no data available
Melting point/freezing point	: MELTING POINT: -15 °C, ASTM D-97
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.013, (15 °C),

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Density	: 8.42 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	: no data available
Viscosity, kinematic	: 2.3 mm ² /s (40 °C), Method: ASTM D 445
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	: Strong oxidizing agents
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x)

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.
Ingestion	: Harmful if swallowed. Causes digestive tract burns.
Inhalation	: May cause nose, throat, and lung irritation.
Chronic Exposure	: May cause damage to organs through prolonged or repeated exposure.

Experience with human exposure

Eye contact	: Redness, Pain, Corrosion
Skin contact	: Redness, Pain, Irritation, Corrosion, Allergic reactions

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Ingestion : Corrosion, Abdominal pain
Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 1,786 mg/kg
Acute inhalation toxicity : no data available
Acute dermal toxicity : no data available
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 : No reproductive toxic effects expected.
Germ cell mutagenicity : Contains no ingredient listed as a mutagen
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : May cause damage to organs through prolonged or repeated exposure.
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.
Harmful to aquatic life with long lasting effects.

Product

Toxicity to fish : no data available
Toxicity to daphnia and other aquatic invertebrates : no data available
Toxicity to algae : no data available

Components

Toxicity to fish : Hexahydro-1,3,5-Trimethyl-S-Triazine
LC50 : > 1.908 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Hexahydro-1,3,5-Trimethyl-S-Triazine
LC50 : 20.352 mg/l

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Exposure time: 48 h

Components

Toxicity to algae : Hexahydro-1,3,5-Trimethyl-S-Triazine
EC50 : 1.145 mg/l
Exposure time: 72 h

Persistence and degradability

The organic portion of this preparation is expected to be inherently 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 : 50 - 70%
Soil : 30 - 50%

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 : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s): : Hexahydro-1,3,5-Trimethyl-S-Triazine

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UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : III
IERG No : 36
Hazchem Code : 2X
Special precautions for user : Dangerous goods of Class 8 (Alkali) are incompatible in a placard load with any of the following:
Class 1 Explosives
Class 4.3 Dangerous when wet substances
Class 5.1 Oxidising agents
Class 5.2 Organic peroxides
Class 7 Radioactive substances
and are incompatible with food or food packaging in any quantity.

Air transport (IATA)

UN/ID No. : UN 2735
Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Hexahydro-1,3,5-Trimethyl-S-Triazine
Transport hazard class(es) : 8
Packing group : III

Sea transport (IMDG/IMO)

UN/ID No. : UN 2735
Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Hexahydro-1,3,5-Trimethyl-S-Triazine
Transport hazard class(es) : 8
Packing group : III

SECTION 15. REGULATORY INFORMATION

Therapeutic Goods (Poisons : Schedule 5
Standard) Instrument

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory.

Australian Inventory of Industrial Chemicals

On the inventory, or in compliance with the inventory

Japan. ENCS - Existing and New Chemical Substances Inventory

not determined

Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

On the inventory, or in compliance with the inventory

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China Inventory of Existing Chemical Substances

On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory

On the inventory, or in compliance with the inventory

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	: 27.06.2025
Date of first issue	: 31.03.2017
Version Number	: 2.0
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.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : HSUR43670A
Other means of identification : Not applicable.
Recommended use : OXYGEN SCAVENGER, CORROSION INHIBITOR, HYDROTEST CHEMICAL
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 : CHEMCALL 1800 127 406, International: +64 4 917 8888
number

Issuing date : 17.01.2023

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Corrosive to metals : Category 1
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 2
Skin corrosion/irritation : Sub-category 1B
Serious eye damage/eye irritation : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Fatal if inhaled.

Precautionary Statements : **Prevention:**
Do not breathe mist or vapours. Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. Wear respiratory 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.
Storage:

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Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : Contact with acids liberates toxic gas.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1	10 - 30
Ammonium Bisulfite	10192-30-0	10 - 30
Ethylene Glycol	107-21-1	5 - 10
Dipropylene Glycol Monomethyl Ether	34590-94-8	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 : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

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 : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion : Decomposition products may include the following materials: Carbon oxides

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products nitrogen oxides (NOx) Sulphur oxides Hydrogen chloride

Special protective equipment : Use personal protective equipment.
for firefighters

Specific extinguishing : Collect contaminated fire extinguishing water separately. This must not be
methods discharged into drains. Fire residues and contaminated fire extinguishing water
must be disposed of in accordance with local regulations.

Hazchem Code : 2X

Section: 6. ACCIDENTAL RELEASE MEASURES

Initial Emergency Response : 37
Guide No

Personal precautions, : Ensure adequate ventilation. Keep people away from and upwind of spill/leak.
protective equipment and : Avoid inhalation, ingestion and contact with skin and eyes. When workers are
emergency procedures : 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 : Stop leak if safe to do so. Contain spillage, and then collect with non-
containment and cleaning up : 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 : Do not ingest. 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 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
Ethylene Glycol	107-21-1	TWA (Vapour.)	20 ppm 52 mg/m3	AU OEL
		VLE (Vapour.)	40 ppm 104 mg/m3	AU OEL
		TWA (Particulate.)	10 mg/m3	AU OEL
Ethylene Glycol	107-21-1	WES-Ceiling (Vapour and mist)	50 ppm 127 mg/m3	NZ OEL
Ethylene Glycol	107-21-1	TWA (Vapour.)	25 ppm	ACGIH
		STEL (Vapour.)	50 ppm	ACGIH
		STEL (Inhalable	10 mg/m3	ACGIH

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		fraction, Aerosol only)		
Dipropylene Glycol Monomethyl Ether	34590-94-8	TWA	50 ppm 308 mg/m3	AU OEL
Dipropylene Glycol Monomethyl Ether	34590-94-8	WES-STEL	150 ppm 909 mg/m3	NZ OEL
		WES-TWA	100 ppm 606 mg/m3	NZ OEL
Dipropylene Glycol Monomethyl Ether	34590-94-8	STEL	150 ppm 900 mg/m3	NIOSH REL
		TWA	100 ppm 600 mg/m3	NIOSH REL
		TWA	100 ppm 600 mg/m3	OSHA Z1

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 : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : 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.
Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.

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

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Colour	: colourless
Odour	: Pungent
Flash point	: Not applicable.
pH	: 4 - 6
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: Not applicable.
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: not determined
Relative vapour density	: no data available
Relative density	: 1.045 - 1.075, (20 °C),
Density	: no data available
Water solubility	: completely miscible
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	: < 20 mPa.s (20 °C)
Viscosity, kinematic	: 10 mm ² /s (40 °C)
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	: None known.
Incompatible materials	: Strong acids Strong bases Strong oxidizing agents
Hazardous decomposition products	: Decomposition products may include the following materials: Carbon oxides

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nitrogen oxides (NOx)
Sulphur oxides
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.
Ingestion : Harmful if swallowed. Causes digestive tract burns.
Inhalation : May cause nose, throat, and lung irritation.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion
Skin contact : Redness, Pain, Corrosion
Ingestion : Corrosion, Abdominal pain, Vomiting
Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 1,441 mg/kg
Acute inhalation toxicity : Acute toxicity estimate: 0.2651 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : no data available
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : no data available
Respiratory or skin sensitization : Result: Contains an ingredient that can cause asthmatic-like reactions in sulfite-sensitive individuals.
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 : No reproductive toxic effects expected.
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

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Aspiration toxicity : No aspiration toxicity classification

Components

Acute dermal toxicity : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides
LD50 rabbit: 3,340 mg/kg
Ethylene Glycol
LD50 rabbit: 10,600 mg/kg
Dipropylene Glycol Monomethyl Ether
LD50 rabbit: 9,510 mg/kg

Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: High

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

Product

Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

Components

Toxicity to fish : Ethylene Glycol
LC50 : 72,860 mg/l
Exposure time: 96 h
Dipropylene Glycol Monomethyl Ether
LC50 Fish: > 1,000 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides
EC50 Daphnia magna (Water flea): 0.016 mg/l
Exposure time: 48 h
Ammonium Bisulfite
EC50 : 89 mg/l
Exposure time: 48 h
Ethylene Glycol
EC50 : > 100 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Ethylene Glycol
EC50 : 6,500 mg/l
Exposure time: 96 h

Components

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Toxicity to bacteria : Ethylene Glycol
> 1,995 mg/l

Components

Toxicity to fish (Chronic toxicity) : Ethylene Glycol
NOEC: 15,380 mg/l
Exposure time: 7 d

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Ethylene Glycol
NOEC: 8,590 mg/l
Exposure time: 7 d

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: High

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 : CORROSIVE LIQUID, N.O.S.
Technical name(s): : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides
UN/ID No. : UN 1760
Transport hazard class(es) : 8
Packing group : II
IERG No : 37

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Hazchem Code : 2X

Air transport (IATA)

UN/ID No. : UN 1760
Proper shipping name : CORROSIVE LIQUID, N.O.S.
Technical name(s) : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides
Transport hazard class(es) : 8
Packing group : II

Sea transport (IMDG/IMO)

UN/ID No. : UN 1760
Proper shipping name : CORROSIVE LIQUID, N.O.S.
Technical name(s) : Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides
Transport hazard class(es) : 8
Packing group : II
Marine pollutant : Quaternary ammonium compound

Section: 15. REGULATORY INFORMATION

Standard for the Uniform : Schedule 6
Scheduling of Medicines and Poisons

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory.

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

Japan. ENCS - Existing and New Chemical Substances Inventory

On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory

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).

Taiwan Chemical Substance Inventory

On the inventory, or in compliance with the inventory

Section: 16. OTHER INFORMATION

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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 : 17.01.2023
Version Number : 1.8
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.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NAPH22211A

Other means of identification : Not applicable.

Recommended use : DEMULSIFIER

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 : 11.10.2021

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 4

Carcinogenicity : Category 2

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Combustible liquid
May be fatal if swallowed and enters airways.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/ eye protection/ face protection. Use personal protective equipment as required.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF exposed or concerned: Get medical advice/attention.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

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Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	30 - 60
Naphthalene	91-20-3	5 - 10
1,2,4-Trimethylbenzene	95-63-6	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.

If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

If inhaled : Get medical attention if symptoms occur.

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 media : High volume water jet

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

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing : Collect contaminated fire extinguishing water separately. This must not be

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methods discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazchem Code : ●3Z

Section: 6. ACCIDENTAL RELEASE MEASURES

Initial Emergency Response : 47
Guide No

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. 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). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Wash hands thoroughly after handling.

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
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Naphthalene	91-20-3	TWA	10 ppm 52 mg/m ³	AU OEL
		VLE	15 ppm 79 mg/m ³	AU OEL
Naphthalene	91-20-3	WES-TWA	0.5 ppm 2.6 mg/m ³	NZ OEL
		WES-STEL	2 ppm 10 mg/m ³	NZ OEL
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm	NIOSH REL

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			50 mg/m3	
		STEL	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 123 mg/m3	AU OEL
1,2,4-Trimethylbenzene	95-63-6	WES-TWA	25 ppm 123 mg/m3	NZ OEL
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m3	NIOSH REL
		TWA	25 ppm	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.
Viton® gloves
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 suitable protective clothing.

Respiratory protection : 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:
Organic vapor cartridge.
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.

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 : black
Odour : hydrocarbon-like

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Flash point	: 68.3 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -17.78 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 10.3 mm Hg, (37.8 °C),
Relative vapour density	: no data available
Relative density	: 0.93 - 0.97, (15.6 °C), ASTM D-1298
Density	: 7.7 - 8.1 lb/gal
Water solubility	: insoluble
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	: 21 mPa.s (23.9 °C)
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

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 oxidizing agents
Hazardous decomposition products	: Decomposition products may include the following materials: Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of : Inhalation, Eye contact, Skin contact

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exposure

Potential Health Effects

Eyes	: Causes eye irritation.
Skin	: Causes mild skin irritation.
Ingestion	: May be fatal if swallowed and enters airways.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Suspected of causing cancer.

Experience with human exposure

Eye contact	: No symptoms known or expected.
Skin contact	: slight irritation
Ingestion	: Vomiting
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: > 2,000 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: Result: Mild eye irritation
Respiratory or skin sensitization	: no data available
Carcinogenicity	: This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).
Reproductive effects	: No toxicity to reproduction
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	: May be fatal if swallowed and enters airways.

Components

Acute dermal toxicity	: 1,2,4-Trimethylbenzene LD50 rat: 3,440 mg/kg Test substance: Information given is based on data obtained from similar substances.

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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.

Product

Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

1,2,4-Trimethylbenzene
LC50 Pimephales promelas (fathead minnow): 7.72 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : 1,2,4-Trimethylbenzene
LC50 Daphnia magna (Water flea): 3.6 mg/l
Exposure time: 48 h

Persistence and degradability

no data available

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 : 10 - 30%
Water : 30 - 50%
Soil : 30 - 50%

Bioaccumulative potential

no data available

Other information

no data available

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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 : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Technical name(s) : Naphthalene, 1,2,4-Trimethylbenzene
- UN/ID No. : UN 3082
- Transport hazard class(es) : 9
- Packing group : III
- IERG No : 47
- Hazchem Code : ●3Z
- Special precautions for user : Dangerous goods of Class 9 (Miscellaneous - fire risk substance, or combustible liquid) are incompatible in a placard load with any of the following:
Class 1 Explosives
Class 5.1 Oxidising agents
Class 5.2 Organic peroxides

Air transport (IATA)

- UN/ID No. : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Technical name(s) : Naphthalene, 1,2,4-Trimethylbenzene
- Transport hazard class(es) : 9
- Packing group : III

Sea transport (IMDG/IMO)

- UN/ID No. : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Technical name(s) : Naphthalene, 1,2,4-Trimethylbenzene
- Transport hazard class(es) : 9
- Packing group : III
- Marine pollutant : Naphthalene, 1,2,4-Trimethylbenzene

Section: 15. REGULATORY INFORMATION

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Standard for the Uniform : Schedule 6
Scheduling of Medicines and
Poisons

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

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)

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

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).

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).

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).

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 : 11.10.2021
Version Number : 1.0
Prepared By : Regulatory Affairs

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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.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : SCAL16109A

Other means of identification : Not applicable.

Recommended use : SCALE INHIBITOR

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 : 29.09.2024

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Corrosive to metals : Category 1

Serious eye damage/eye irritation : Category 2A

GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : May be corrosive to metals.
Causes serious eye irritation.

Precautionary Statements : **Prevention:**
Keep only in original packaging. Wash skin thoroughly after handling. Wear eye protection/face protection.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage.
Storage:
Store in a corrosion resistant container with a resistant inner liner.

Other hazards : None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Pure substance/mixture : Mixture

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
Bishexamethylenetriamine, pentamethylenepentaphosphonic acid	34690-00-1	10 - 30

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.

In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.

If swallowed : Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).
Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

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 : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Carbon oxides nitrogen oxides (NOx) Oxides of phosphorus

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

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- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : 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). 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 : Use only with adequate ventilation. Avoid contact with skin and eyes. Wash face, hands and any exposed skin thoroughly after handling.
- Conditions for safe storage : 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

Contains no substances with occupational exposure limit values.

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety glasses with side-shields
- 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.
Nitrile-rubber, Butyl-Rubber, or Neoprene gloves.
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 suitable protective clothing.
- Respiratory protection : No personal respiratory protective equipment normally required.
If user operations generate significant vapours that cannot be controlled with ventilation or engineering controls, 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.

Refer to AS/NZS 1715 and AS/NZS 1716 for selection, use and maintenance of respiratory protective equipment as applicable.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Remove and wash

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contaminated clothing before re-use.

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 Brown
Odour	: no data available
Flash point	: > 94.0 °C
pH	: 4.0 - 5.5
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.09 - 1.13, (25 °C),
Density	: no data available
Water solubility	: no data available
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	: no data available
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.

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Conditions to avoid	: None known.
Incompatible materials	: None known.
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx) Oxides of phosphorus

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Causes serious eye irritation.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: Redness, Pain, Irritation
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available
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	: No toxicity to reproduction
Germ cell mutagenicity	: Contains no ingredient listed as a mutagen
Teratogenicity	: no data available

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STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : No aspiration toxicity classification

Components

Acute oral toxicity : Bishexamethylenetriamine, pentamethylenepentaphosphonic acid
LD50 rat: 4,164 mg/kg

Components

Acute dermal toxicity : Bishexamethylenetriamine, pentamethylenepentaphosphonic acid
LD50 rabbit: > 5,050 mg/kg

Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: Low

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : no data available
Toxicity to daphnia and other aquatic invertebrates : no data available
Toxicity to algae : no data available

Components

Toxicity to daphnia and other aquatic invertebrates : Bishexamethylenetriamine, pentamethylenepentaphosphonic acid
EC50 : 110 mg/l
Exposure time: 48 h

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Low

SECTION 13. DISPOSAL CONSIDERATIONS

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- Disposal methods : 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 : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 15. REGULATORY INFORMATION

Therapeutic Goods (Poisons Standard) Instrument : No poison schedule number allocated

INTERNATIONAL CHEMICAL CONTROL LAWS :

Australian Inventory of Industrial Chemicals

All components are listed or exempted.

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.

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The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Revision Date : 29.09.2024
Date of first issue : 28.07.2017
Version Number : 1.4
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.

Chemical Disclosure

A. SYSTEM DETAILS	
OPERATOR:	Buru Energy
PROJECT / WELL:	Ungani Wells
SYSTEM:	Suspension Fluid
TOTAL VOLUME OF SYSTEM (m ³):	Approximately 850 bbl (135 kL)

B. PRODUCT LIST

Trade name	Supplier	Purpose	Product in system (%)	Toxicity & Ecotoxicity Info	SDS Attached
Fresh water	Onsite bore	Mix water	96.212%	N/A	N/A
BIOC16733A	ChampionX	Biocide	3.788%	Chronic Toxicity: Suspected of damaging fertility or the unborn child. 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. Toxicity: Toxic to aquatic life with long lasting effects. Harmful to aquatic life. <u>Toxicity to fish :</u> 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 <u>Toxicity to daphnia and other aquatic invertebrates:</u> EC50 Daphnia magna (Water flea): 19.4 mg/l; Exposure time: 48 hrs; Test substance: 75% Active Ingredient <u>Toxicity to algae:</u> LC50 Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum): 0.20 mg/l; Exposure time: 96 hrs; Test substance: 75% Active Ingredient <u>Toxicity to bacteria:</u> 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. <u>Mobility:</u> 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	Yes

Chemical Disclosure

Trade name	Supplier	Purpose	Product in system (%)	Toxicity & Ecotoxicity Info	SDS Attached
				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	
Total			100%		
KCL Potassium Chloride	Halliburton	Weighting Material / Brine	Contingency, ~5%	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 Acute Toxicity: Oral – LD50: 3,020 mg/kg (Rat). Dermal - LD50: > 2,000 mg/L (Rabbit). Ecotoxicity: Algae/aquatic plants: EC50(72h): 2500 mg/L (Desmodesmus subspicatus); EC50(72h): > 100 mg/L (growth rate) (Desmodesmus subspicatus). Fish: LC50: 1060 mg/L (Lepomis macrochirus); LC50: 750-1020 mg/L (Pimephales promelas). Toxicity to microorganisms: EC50(3h): >1000 mg/L (activated sludge). Crustacea: TLM96: 100-330 ppm (Crangon crangon) EC50(24h): >= 580 <=990 mg/L (Daphnia magna); EC50(48h): >=440 <= 880 mg/L (Daphnia magna). No carcinogenic, mutagenic or reproductive effects. Mobility: No data available. Biodegradation/bioaccumulation:	Yes

Chemical Disclosure

Trade name	Supplier	Purpose	Product in system (%)	Toxicity & Ecotoxicity Info	SDS Attached
				Potassium Chloride is an inorganic salt, naturally occurring. KCl is fully soluble and highly mobile in soil. The product is not known to be bioaccumulative.	
Sodium Chloride	Halliburton	Weighting Material	Contingency, ~5%	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. <u>Acute Toxicity:</u> Oral (rat) LD50: 3,000 mg/kg, 3,550 mg/kg (Rat) Dermal (rabbit) LD50: >10,000 mg/kg Inhalation (rat) LC50: >42 mg/L (1h) <u>Chronic Toxicity:</u> No data available to indicate product or components present at greater than 1% are chronic health hazards. No carcinogenic, mutagenic or reproductive effects. <u>Ecotoxicity:</u> Toxicity to Fish: LC50 (96h) 9675 mg/L. Toxicity to Crustacea: EC50: =1000mg/L (48h) Daphnia magna; EC50: 340.7 - 469.2mg/L (48h) Daphnia magna. Toxicity to Earthworm: Acute Toxicity: LC50 0.1 – 1 mg/cm2 Eisenia foetida (48 h filter paper) Source: IUCLID <u>Mobility:</u> No data available. <u>Biodegradation/bioaccumulation:</u> Sodium Chloride is an inorganic, naturally occurring salt and Biodegradation does not apply due to being inorganic (does not contain any Carbon or Hydrogen). Sodium Chloride is fully water soluble, abundant in nature and highly mobile in soil. The product is not known to be Bioaccumulative.	Yes

Chemical Disclosure

C. CHEMICAL LIST

Chemicals within products in Part B	CAS #	Maximum Mass fraction in System (%)
Water	7732-18-5	96.212%
Tetrakis(hydroxymethyl) phosphonium sulfate	55566-30-8	3.39561%
Benzyl-(C12-C16 Linear Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	0.39239%
Total		100%
Potassium Chloride	7447-40-7	Contingency, 5%
Sodium Chloride	7647-14-5	Contingency, 5%

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 : CHEMCALL 1800 127 406, International: +64 4 917 8888
number

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

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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

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
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 media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.

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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

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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.

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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

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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

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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

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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 : Schedule 6
Scheduling of Medicines and Poisons

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)

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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.

SAFETY DATA SHEET

KCL POTASSIUM CHLORIDE

Revision date: 30-Apr-2025

Revision Number: 30

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name KCL POTASSIUM CHLORIDE

Product Code(s) HM000965

Other means of identification

Pure substance/mixture Substance

Molecular weight 74.55

Recommended use of the chemical and restrictions on use

Recommended use Brine

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.

Acute aquatic toxicity	Not classified for acute
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

May be harmful if swallowed.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Potassium chloride	7447-40-7	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

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.
	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.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool, dry location. Product has a shelf life of 60 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.

Individual protection measures, such as personal protective equipment

Eyeface protection Dust proof goggles. (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. Normal work coveralls.

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. 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 gray
Odour	Odourless.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	9.2	
Melting point / freezing point	771.1 °C / 1420 °F	
Initial boiling point and boiling range	1412.8 °C / 2575 °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	1.99	
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	74.55	
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** 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.**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
Potassium chloride	3020 mg/kg (Rat)	> 2000 mg/L (Rabbit) (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**

Chemical name	Skin corrosion/irritation
Potassium chloride 7447-40-7	Non-irritating to the skin (Rabbit) (similar substances)

Serious eye damage/eye irritation

Chemical name	Serious eye damage/eye irritation

Potassium chloride 7447-40-7	May cause mild eye irritation (Rabbit) (similar substances)

Respiratory or skin sensitisation

Chemical name	Respiratory sensitisation
Potassium chloride 7447-40-7	No information available
Chemical name	Skin sensitisation
Potassium chloride 7447-40-7	Did not cause sensitisation on laboratory animals (mouse) (similar substances)

Germ cell mutagenicity

Chemical name	Germ cell mutagenicity
Potassium chloride 7447-40-7	In vitro tests did not show mutagenic effects.

Carcinogenicity

Chemical name	Carcinogenicity
Potassium chloride 7447-40-7	Did not show carcinogenic effects in animal experiments (similar substances)

Reproductive toxicity

Chemical name	Reproductive toxicity
Potassium chloride 7447-40-7	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
Potassium chloride 7447-40-7	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure

Chemical name	STOT - repeated exposure
Potassium chloride 7447-40-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Aspiration hazard

Chemical name	Aspiration hazard
Potassium chloride 7447-40-7	Not applicable

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
Potassium chloride	EC50(72h): 2500 mg/l	LC50: 1060 mg/L	EC50(3h): >1000 mg/L	TLM96: 100-330 ppm

	(Desmodesmus subspicatus) EC50(72h): > 100 mg/L (growth rate) (Desmodesmus subspicatus)	(Lepomis macrochirus); LC50: 750-1020 mg/L (Pimephales promelas)	(activated sludge)	(Crangon crangon) EC50(24h): >= 580 <=990 mg/L (Daphnia magna) EC50(48h): >=440 <= 880 mg/L (Daphnia magna)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Chemical name	Persistence and degradability
Potassium chloride 7447-40-7	The methods for determining biodegradability are not applicable to inorganic substances.

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 4

Australian Industrial Chemicals Introduction Scheme (AICIS)

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Potassium chloride - 7447-40-7	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 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 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

SAFETY DATA SHEET

SODIUM CHLORIDE

Revision date: 30-Apr-2025

Revision Number: 39

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SODIUM CHLORIDE

Product Code(s) HM001682

Other means of identification

Pure substance/mixture Substance

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: 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

Serious eye damage/eye irritation	Category 2

Label elements



Signal word

WARNING

Hazard statements

Causes serious eye irritation.

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling.

Wear eye/face protection.

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/attention.

Other hazards which do not result in classification

May be harmful if swallowed.

Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Sodium chloride	7647-14-5	60 - 100%

Section 4: First aid measures**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air.

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. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin contact

Wash skin with soap and water.

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**

May cause redness and tearing of the eyes. 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. 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.
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 Avoid contact with skin, eyes or clothing. 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. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

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.

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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses or goggles to protect against exposure. If splashes are likely to occur, wear safety glasses with side-shields.

Skin and body protection Normal work coveralls. Wear suitable protective clothing.

Hand protection Normal work gloves. Wear suitable 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
Odour Odourless.
Odour threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	~7	
Melting point / freezing point	801.1 °C / 1474 °F	
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	2.16	
Water solubility	Very soluble	
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	
<u>Other information</u>		

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	None known.

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 irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms	May cause redness and tearing of the eyes.

Acute toxicity

Numerical measures of toxicity - Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium chloride	3000 mg/kg-bw (rat)	>10,000 mg/kg bw (rabbit)	> 42 mg/L (Rat) 1 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 Based on available data, the classification criteria are not met.

Chemical name	Skin corrosion/irritation
Sodium chloride 7647-14-5	Not a dermal irritant

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

Chemical name	Serious eye damage/eye irritation
Sodium chloride 7647-14-5	Causes mild eye irritation.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Chemical name	Respiratory sensitisation
Sodium chloride 7647-14-5	Not confirmed to cause skin or respiratory sensitization.
Chemical name	Skin sensitisation
Sodium chloride 7647-14-5	Not confirmed to cause skin or respiratory sensitization.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Chemical name	Germ cell mutagenicity
Sodium chloride 7647-14-5	No information available

Carcinogenicity Based on available data, the classification criteria are not met.

Chemical name	Carcinogenicity
Sodium chloride 7647-14-5	Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

Chemical name	Reproductive toxicity
Sodium chloride 7647-14-5	Based on available data, the classification criteria are not met.

STOT - single exposure Based on available data, the classification criteria are not met.

Chemical name	STOT - single exposure
Sodium chloride 7647-14-5	No significant toxicity observed in animal studies at concentration requiring classification.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Chemical name	STOT - repeated exposure
Sodium chloride 7647-14-5	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
Sodium chloride 7647-14-5	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
Sodium chloride	-	LC50 (96h) 9675 mg/L	-	EC50: =1000mg/L (48h, Daphnia magna) EC50: 340.7 - 469.2mg/L (48h, Daphnia magna)

Terrestrial ecotoxicity

Chemical name	Earthworm	Avian	Honeybees
Sodium chloride	Acute Toxicity: LC50 0.1 - 1 mg/cm2 (Eisenia foetida 48 h filter paper) Source: IUCLID	-	-

Persistence and degradability Based on available data, the classification criteria are not met

Chemical name	Persistence and degradability
Sodium chloride 7647-14-5	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation There is no data for this product.

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

Chemical name	Mobility
Sodium chloride 7647-14-5	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
Sodium chloride - 7647-14-5	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 30-Apr-2025

Reason for revision Update to Format SDS sections updated: 2 4 11

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 - najwyższe dopuszczalne stężenie 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 Zealand 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/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

NDS - OEL-TWA [Poland najwyższe dopuszczalne stężenie 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
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
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IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
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mg/m³ - milligram/cubic meter
mm - millimeter
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NDS - OEL-TWA [Poland najwyższe dopuszczalne stężenie 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
+	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 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

Chemical Disclosure

SYSTEM DETAILS:

OPERATOR:	Buru Energy
PROJECT / WELL:	Ungani Wells
SYSTEM:	Well Circulation Fluid
TOTAL VOLUME OF SYSTEM:	Approx. 150 bbl (24 kL)

A. PRODUCT LIST:

Product name	Supplier	Purpose	Toxicity, Ecotoxicity and Biodegradability data	Product in system (%)	SDS Attached
Fresh water	Onsite bore	Mix water	N/A	59.3495%	N/A
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 Biodegradation/bioaccumulation:	34.8902%	Yes

Chemical Disclosure

Product name	Supplier	Purpose	Toxicity, Ecotoxicity and Biodegradability data	Product in system (%)	SDS Attached
			Low		
Acetic acid	Halliburton	Chelating agent	Acute Toxicity: LD50 oral – no data available LD50 dermal (rabbit): 1,060 mg/kg LC50 inhalation (rat): 11.4 mg/L (4h vapour) EC50 (72h) 55.22 mg/L <i>Anabaena</i> (algae) (Effect concentrations in the aquatic environment are attributable to a change in pH value). LC50 (96h) 75 mg/L <i>Lepomis macrochirus</i> (fish) LC50 (96h) 251 mg/L <i>Gambusia affinis</i> (fish) (Effect concentrations in the aquatic environment are attributable to a change in pH value). NOAEC (16 h) 1,150 mg/L <i>Pseudomonas putida</i> EC50 (48h) 65 mg/L <i>Daphnia magna</i> (freshwater invertebrate) (Effect concentrations in the aquatic environment are attributable to a change in pH value). Chronic Toxicity: No known carcinogenic, chronic, mutagenic or reproductive effects for this product. Mobility: No data available. Biodegradation/bioaccumulation: Readily biodegradable (99% @ 7d). Log Kow -0.17 The product is not known to be Bioaccumulative.	0.111%	Yes
Rodine 85	Henkel	Acid inhibitor	Toxicology Data: Component 1 (<10%) LD50 oral: 56.4 mg/kg (rat) LC50 (96h) 4.6 mg/L <i>Leuciscus idus</i> (fish) EC50 (24h) 11 mg/L <i>Daphnia magna</i> (freshwater invertebrate) EC50 (8d) >18 mg/L <i>Scenedesmus quadricauda</i> (algae) Component 2 (<5%) LD50 oral: 930 mg/kg (mouse) LD50 dermal: >1,000 - <2,000 mg/kg (rat) EC50 (48h) 56 mg/L <i>Daphnia magna</i> (freshwater invertebrate) Component 3 (<30%) Acute toxicity estimate: oral: 300 mg/kg	0.01843%	Yes

Chemical Disclosure

Product name	Supplier	Purpose	Toxicity, Ecotoxicity and Biodegradability data	Product in system (%)	SDS Attached
			LC50 (96h) <i>P. promelas</i> 24 mg/L (fish) LC50 (96h) <i>D. rerio</i> 41 mg/L (fish) EC50 (48h) <i>Daphnia magna</i> ~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.		
Citric Acid	Halliburton	pH control	Acute Toxicity: LD50 oral: 5,400 mg/kg (rat); 5,790 mg/kg (mouse); 11,700 mg/kg (rat) LD50 dermal: >2,000 mg/kg Toxicity to Algae: EC50 (72h) 18000 mg/L (<i>Chlorella vulgaris</i>); NOEC (8d) 425 mg/L (cell density) (<i>Scenedesmus quadricauda</i>); LOEC (8d) >80 mg/L (<i>Microcystis aeruginosa</i>) Toxicity to Fish: LC50 (96h) 1516 mg/L (<i>Lepomis macrochirus</i>); LC50 (48h) 440 mg/L (<i>Leuciscus idus melanotus</i>); LC50 (96h) >100 mg/L (<i>Pimephales promelas</i>) Toxicity to Microorganisms: TT (72h) 485 mg/L (<i>Entosiphon sulcatum</i>) Toxicity to Invertebrates: TLM96 100-330 ppm (<i>Crangon crangon</i>); EC50 (24h) 1535 mg/L (<i>Daphnia magna</i>); LC50 (48h) 160 mg/L (<i>Daphnia magna</i>); EC50 (48h) >50 mg/L (<i>Daphnia magna</i>). Chronic Toxicity: Chronic effects / carcinogenicity: No data available to indicate product or components present at greater than 0.1% are chronic health hazards. No mutagenic, carcinogenic or reproductive effects. Mobility: No data available. Biodegradation/bioaccumulation: Citric Acid is extract of Citrus and rapidly biodegradable. Readily biodegradable (97% @ 28d). Rapidly biodegradable in water and soil. The product is not known to be Bioaccumulative – Log Pow -1.61 to -1.80.	1.843%	Yes
BIOC16733A	ChampionX	Biocide	Chronic Toxicity: Suspected of damaging fertility or the unborn child. No component of this product present at levels greater than or equal to 0.1% is	3.788%	Yes

Chemical Disclosure

Product name	Supplier	Purpose	Toxicity, Ecotoxicity and Biodegradability data	Product in system (%)	SDS Attached
			identified as probable, possible or confirmed human carcinogen by IARC. Toxicity: Toxic to aquatic life with long lasting effects. Harmful to aquatic life. <u>Toxicity to fish :</u> 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 <u>Toxicity to daphnia and other aquatic invertebrates:</u> EC50 Daphnia magna (Water flea): 19.4 mg/l; Exposure time: 48 hrs; Test substance: 75% Active Ingredient <u>Toxicity to algae:</u> LC50 Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum): 0.20 mg/l; Exposure time: 96 hrs; Test substance: 75% Active Ingredient <u>Toxicity to bacteria:</u> 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. <u>Mobility:</u> 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.		
			Total:	100%	100%
Soda Ash	Halliburton	pH control / Buffer	Toxicology Data	0.0500%	Yes

Chemical Disclosure

Product name	Supplier	Purpose	Toxicity, Ecotoxicity and Biodegradability data	Product in system (%)	SDS Attached
			LD50 Oral: 2,800 mg/kg (Rat) LD50 Dermal: >2,000 mg/kg (Rabbit) LC50 Inhalation: 1.15 mg/L (Rat) 4h (aerosol) Substance Ecotoxicity Data Toxicity to Algae - EC50 242 mg/L (Nitzschia) Toxicity to Fish –LC50 310-1,220 mg/L (Pimephales promelas); LC50 (96h) 300 mg/L (Lepomis macrochirus) Toxicity to Microorganisms - No information available Toxicity to Invertebrates – EC50 265 mg/L (Daphnia magna); EC50 (48h) 200 – 227 mg/L (Ceriodaphnia sp.) No data available to indicate product or components present at greater than 0.1% are chronic health hazards. No mutagenic, carcinogenic or reproductive effects. Biodegradation/bioaccumulation: Soda Ash is an inorganic (Sodium Carbonate), naturally occurring salt and partially biodegradable. Soda Ash is fully water soluble and highly mobile in soil. Biodegradability does not pertain to inorganic substances. Does not bioaccumulate. Dissociates into ions.		
Sodium Bicarbonate	Halliburton	pH control	Toxicology Data for Components LD50 Oral: No data available LD50 Dermal: No data available LC50 Inhalation: No data available Substance Ecotoxicity Data Ecotoxicity = Based on available data, the classification criteria are not met Toxicity to Algae - No information available Toxicity to Fish – No information available Toxicity to Microorganisms - No information available Toxicity to Invertebrates – No information available No mutagenic, carcinogenic or reproductive effects. Biodegradation/bioaccumulation: Sodium Bicarbonate is an inorganic, naturally occurring salt and partially biodegradable. Sodium Bicarbonate is fully water soluble and highly mobile in soil. The product is not	0.0500%	Yes

Chemical Disclosure

Product name	Supplier	Purpose	Toxicity, Ecotoxicity and Biodegradability data	Product in system (%)	SDS Attached
			known to be Bioaccumulative.		

Chemical Disclosure

B. Chemical List:

Chemicals within products in Part B	CAS #	Maximum Mass fraction in System (%)
Water	7732-18-5	89.0062%
Hydrochloric acid	7647-01-0	5.23353%
Acetic acid	64-19-7	0.111%
Citric Acid	77-92-9	1.8415%
Prop-2-yn-1-ol	107-19-7	0.002%
1,3-diethyl-2-thiourea	105-55-5	0.001%
Methanol	67-56-1	0.0007%
Formaldehyde polymer with o-toluidinium chloride	68492-82-0	0.006%
Tetrakis(hydroxymethyl) phosphonium sulfate	55566-30-8	3.39840%
Benzyl-(C12-C16 Linear Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	0.39967%
Total		100%
Sodium Carbonate	497-19-8	Contingency, 0.050000%
Sodium Bicarbonate	144-55-8	Contingency, 0.050000%

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 : CHEMCALL 1800 127 406, International: +64 4 917 8888
number

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

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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

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Concentration: (%)</u>
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 media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.

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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

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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.

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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

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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

SAFETY DATA SHEET

BIOC16733A

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

SAFETY DATA SHEET

BIOC16733A

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 : Schedule 6
Scheduling of Medicines and Poisons

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)

SAFETY DATA SHEET

BIOC16733A

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.

SAFETY DATA SHEET**CITRIC ACID**

Revision Date: 09-Mar-2023

Revision Number: 54

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 CITRIC ACID

Other means of Identification

Synonyms None

Hazardous Material Number: HM004421

Recommended use of the chemical and restrictions on use

Recommended Use Scale Remover pH Control

Uses advised against No information available

Supplier's name, address and phone number

Manufacturer/Supplier Halliburton/Baroid 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

Serious Eye Damage/Irritation

Category 2 - H319

Label elements, including precautionary statements

Hazard Pictograms

**Signal Word**

WARNING

Hazard Statements:

H319 - Causes serious eye irritation

Precautionary Statements**Prevention**P264 - Wash face, hands and any exposed skin thoroughly after handling
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
P337 + P313 - If eye irritation persists: Get medical advice/attention**Storage**

None

Disposal

None

**Contains
Substances**

Citric acid

CAS Number

77-92-9

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
Citric acid	77-92-9	60 - 100%	Eye Irrit. 2A (H319)

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 15 minutes. Get immediate medical attention.

Skin

For skin contact, wipe away excess material with dry towel. Then wash affected areas with plenty of water, and soap if available, for several minutes. Get medical attention if irritation occurs.

Ingestion

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

Symptoms caused by exposure

Causes serious eye 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. 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 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. 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
Citric acid	77-92-9	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	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	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. Normal work coveralls.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists. (EN-166)
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:	Solid	Color	White
Odor:	Odorless	Odor Threshold:	No information available

<u>Property</u>	<u>Values</u>
Remarks/ - Method	
pH:	1.8
Freezing Point / Range	No data available
Melting Point / Range	153 °C / 307.4 °F
Pour Point / Range	No data available
Boiling Point / Range	Decomposes
Flash Point	345 °C / 653 °F
Upper flammability limit	65
Lower flammability limit	%
Evaporation rate	No data available
Vapor Pressure	0.0000221 Pa
Vapor Density	No data available
Specific Gravity	1.66
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	-1.61 to -1.80
Autoignition Temperature	1010 °C / 1832 °F
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	192.12
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. Sulfuric acid. Nitric acid.

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 serious eye irritation.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Citric acid	77-92-9	5400 mg/kg (Rat) 5790 mg/kg (Mouse) 11,700 mg/kg (Rat)	> 2000 mg/kg	No data available

Immediate, delayed and chronic health effects from exposure**Inhalation**

May cause mild respiratory irritation.

Eye Contact

Causes serious eye irritation.

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

Substances	CAS Number	Skin corrosion/irritation
Citric acid	77-92-9	Not irritating to skin in rabbits.

Substances	CAS Number	Serious eye damage/irritation
Citric acid	77-92-9	Causes moderate eye irritation

Substances	CAS Number	Skin Sensitization
Citric acid	77-92-9	Patch test on human volunteers did not demonstrate sensitization properties

Substances	CAS Number	Respiratory Sensitization
Citric acid	77-92-9	No information available

Substances	CAS Number	Mutagenic Effects
Citric acid	77-92-9	Did not show mutagenic effects in animal experiments

Substances	CAS Number	Carcinogenic Effects
Citric acid	77-92-9	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Citric acid	77-92-9	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Substances	CAS Number	STOT - single exposure
Citric acid	77-92-9	No data of sufficient quality are available.
Substances	CAS Number	STOT - repeated exposure
Citric acid	77-92-9	No significant toxicity observed in animal studies at concentration requiring classification.
Substances	CAS Number	Aspiration hazard
Citric acid	77-92-9	No adverse health effects are expected from swallowing.

12. Ecological Information

Ecotoxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Citric acid	77-92-9	EC50 (72h) 18000 mg/L (Chlorella vulgaris) NOEC (8d) 425 mg/L (cell density) (Scenedesmus quadricauda) LOEC (8d) >80 mg/L (Microcystis aeruginosa)	LC50 (96h) 1516 mg/L (Lepomis macrochirus) LC50 (48h) 440 mg/L (Leuciscus idus melanotus) LC50 (96h) >100 mg/L (Pimephales promelas)	TT (72h) 485 mg/L (Entosiphon sulcatum)	TLM96 100-330 ppm (Crangon crangon) EC50 (24h) 1535 mg/L (Daphnia magna) LC50 (48h) 160 mg/L (Daphnia magna) EC50 (48h) >50 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Citric acid	77-92-9	Readily biodegradable (97% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Citric acid	77-92-9	-1.61 to -1.80

12.4. Mobility in soil

Substances	CAS Number	Mobility
Citric acid	77-92-9	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.

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 AICS 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: 09-Mar-2023

Revision Note

Update to Format

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation

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 abbreviations 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/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/
OSHA
ECHA C&L
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

SAFETY DATA SHEET**Acetic Acid 80%**

Revision Date: 18-May-2021

Revision Number: 1

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 Acetic Acid 80%

Other means of Identification

Synonyms None

Hazardous Material Number: HM009577

Recommended use of the chemical and restrictions on use

Recommended Use Solvent

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 1 - H314
Serious Eye Damage/Irritation	Category 1 - H318
Flammable liquids.	Category 4 - H227

Label elements, including precautionary statements**Hazard Pictograms**

**Signal Word**

DANGER

Hazard Statements:

H226 - Flammable liquid and vapor
 H314 - Causes severe skin burns and eye damage
 H318 - Causes serious eye damage

Precautionary Statements**Prevention**

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

P280 - Wear protective gloves/protective clothing/eye protection/face 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

P370 + P378 - In case of fire: Use water spray for extinction

Storage

P403 - Store in a well-ventilated place

Disposal

P405 - Store locked up

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

Contains Substances
 Acetic acid

CAS Number
 64-19-7

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
Acetic acid	64-19-7	50 - 80%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) Flam. Liq. 3 (H226)

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

In case of contact, immediately flush skin with plenty of soap and water for at least

Ingestion

30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

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 respiratory 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**

Use water spray to cool fire exposed surfaces. Decomposition in fire may produce harmful gases. Do not allow runoff to enter waterways.

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. Remove sources of ignition.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Remove ignition sources and work with non-sparking tools. Dike far ahead of liquid spill for later disposal. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. 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**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

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. Store away from oxidizers. Store away from alkalis. Keep from heat, sparks, and open flames. 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
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³	TWA: 10 ppm STEL: 15 ppm

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/acid gas respirator.

Hand Protection

Impervious gloves 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

No information available

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Color: Clear

Odor: Acrid Vinegar

Odor Threshold: 0.48 ppm

Property

Values

Remarks/ - Method

pH:

2.4

Freezing Point / Range

16 °C

Melting Point / Range

No data available

Pour Point / Range

No data available

Boiling Point / Range

71 - 91 °C / 160 - 196 °F

Flash Point

55 °C / 131 °F (PMCC)

Upper flammability limit

19.9%

Lower flammability limit

4%

Evaporation rate

No data available

Vapor Pressure

20.79 hPa @ 20 C

Vapor Density

2.1

Specific Gravity

1.05

Water Solubility

Soluble in water

Solubility in other solvents

No data available

Partition coefficient: n-octanol/water

-0.17

Autoignition Temperature

No data available

Decomposition Temperature

No data available

Viscosity

1.011 mm²/s @ 25 °C

Explosive Properties

No information available

Oxidizing Properties

No information available

9.2. Other information

Molecular Weight
VOC Content (%)

60.6 (g/mole)
 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 alkalis. 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.

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 respiratory irritation.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic acid	64-19-7	No data available	1060 mg/kg-bw (rabbit)	11.4 mg/L (rat, 4 h, vapor)

Immediate, delayed and chronic health effects from exposure

Inhalation Causes severe respiratory irritation.

Eye Contact Causes eye burns

Skin Contact Causes skin burns which may not be immediately painful or visible.

Ingestion Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

Exposure Levels

No data available

Interactive effects

Skin disorders.

Data limitations

No data available

Substances	CAS Number	Skin corrosion/irritation
Acetic acid	64-19-7	Extremely corrosive and destructive to tissue Skin, rabbit:

Substances	CAS Number	Serious eye damage/irritation
Acetic acid	64-19-7	Eye, rabbit: Causes serious eye damage

Substances	CAS Number	Skin Sensitization
Acetic acid	64-19-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Acetic acid	64-19-7	No information available
Substances	CAS Number	Mutagenic Effects
Acetic acid	64-19-7	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects.
Substances	CAS Number	Carcinogenic Effects
Acetic acid	64-19-7	Did not show carcinogenic effects in animal experiments
Substances	CAS Number	Reproductive toxicity
Acetic acid	64-19-7	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility.
Substances	CAS Number	STOT - single exposure
Acetic acid	64-19-7	May cause respiratory irritation. No information available
Substances	CAS Number	STOT - repeated exposure
Acetic acid	64-19-7	No significant toxicity observed in animal studies at concentration requiring classification.
Substances	CAS Number	Aspiration hazard
Acetic acid	64-19-7	Not applicable

12. Ecological Information

Ecotoxicity

Product Ecotoxicity Data

Product is not classified as hazardous to the environment.

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Acetic acid	64-19-7	EC50(72 h)=55.22 mg/L (Anabaena flos-aquae)	LC50(96 h)=251 mg/L (Gambusia affinis) LC50(96 h)=75 mg/L (Lepomis macrochirus)	NOAEC (16 h) =1150 mg/L (Pseudomonas putida)	EC50(48 h)=65 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Acetic acid	64-19-7	Readily biodegradable (99% @ 7d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Acetic acid	64-19-7	LogPow-0.17

12.4. Mobility in soil

Substances	CAS Number	Mobility
Acetic acid	64-19-7	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	UN2790
UN proper shipping name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number	UN2790
UN proper shipping name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
Environmental Hazards:	Not applicable
EMS:	EmS F-A, S-B

IATA/ICAO

UN Number	UN2790
UN proper shipping name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	II
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

2R

15. Regulatory Information**Safety, health and environmental regulations specific for the product****International Inventories****Australian AICS Inventory**

All components are listed on the AIIIC 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: 18-May-2021

Revision Note

SDS sections updated:

2
9
11
14

Full text of H-Statements referred to under sections 2 and 3

H226 - Flammable liquid and vapor

H227 - Combustible liquid

H314 - Causes severe skin burns and eye damage

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 abbreviations 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/m³ - 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

HYDROCHLORIC ACID 32%

Coogee

Chemwatch: 48-4484

Version No: 8.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 3

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.

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	<u>hydrochloric acid</u>
7732-18-5	balance	<u>water</u>
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 conjunctival 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...

HYDROCHLORIC ACID 32%

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]
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

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

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

HYDROCHLORIC ACID 32%

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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Safety Data Sheet

BONDERITE S-AD 85 ACID INHIBITOR ADDITIVE known as
RODINE 85 20LT

Page 1 of 10

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:

<u>Hazard Class</u>	<u>Hazard Category</u>	<u>Route of Exposure</u>
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/cm ³
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 maximisa- tion test	guinea pig	Magnusson and Kligman Method
methanol 67-56-1	not sensitising	Guinea pig maximisa- tion 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 life 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" Biodegradability Closed 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" Biodegradability Closed 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: -

SAFETY DATA SHEET**SODA ASH**

Revision Date: 09-Feb-2022

Revision Number: 47

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 SODA ASH

Other means of Identification

Synonyms None

Hazardous Material Number: HM001822

Recommended use of the chemical and restrictions on use

Recommended Use Buffer

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

Serious Eye Damage/Irritation

Category 2 - H319

Label elements, including precautionary statements

Hazard Pictograms

**Signal Word**

WARNING

Hazard Statements:

H319 - Causes serious eye irritation

Precautionary Statements**Prevention**P264 - Wash face, hands and any exposed skin thoroughly after handling
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
P337 + P313 - If eye irritation persists: Get medical advice/attention**Storage**

None

Disposal

None

Contains**Substances**

Sodium carbonate

CAS Number

497-19-8

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
Sodium carbonate	497-19-8	60 - 100%	Eye Irrit. 2 (H319)

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

Causes eye 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**

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. 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 away from acids. Store in a cool, dry location. 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
Sodium carbonate	497-19-8	Not applicable	Not applicable

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area. Localized ventilation should be used to control dust levels.

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

Hand Protection	instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Skin Protection	Normal work gloves. 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. Normal work coveralls.
Eye Protection	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.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Powder	Color	White
Odor:	Odorless	Odor Threshold:	No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	11.5
Freezing Point / Range	No data available
Melting Point / Range	851 °C
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	2.5
Water Solubility	Partly soluble
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	105.99 g/mole
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

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 eye irritation. May be harmful if swallowed.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium carbonate	497-19-8	2800 mg/kg (Rat)	>2000 mg/kg (Rabbit)	1.15 mg/L (Rat, 4 hr, aerosol)

Immediate, delayed and chronic health effects from exposure**Inhalation**

May cause mild respiratory irritation.

Eye Contact

Causes eye irritation.

Skin Contact

Not irritating to skin in rabbits.

Ingestion

May be harmful if swallowed. 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

None known.

Data limitations

No data available

Substances	CAS Number	Skin corrosion/irritation
Sodium carbonate	497-19-8	Non-irritating to the skin

Substances	CAS Number	Serious eye damage/irritation
Sodium carbonate	497-19-8	Irritating to eyes

Substances	CAS Number	Skin Sensitization
Sodium carbonate	497-19-8	Not classified

Substances	CAS Number	Respiratory Sensitization
Sodium carbonate	497-19-8	No information available

Substances	CAS Number	Mutagenic Effects
Sodium carbonate	497-19-8	In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Sodium carbonate	497-19-8	No information available

Substances	CAS Number	Reproductive toxicity
Sodium carbonate	497-19-8	Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Sodium carbonate	497-19-8	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Sodium carbonate	497-19-8	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Sodium carbonate	497-19-8	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 carbonate	497-19-8	EC50 242 mg/L (Nitzschia)	LC50(96h) 300 mg/L (Lepomis macrochirus) LC50 310-1220 mg/L (Pimephales promelas)	No information available	EC50 265 mg/L (Daphnia magna) EC50 (48h) 200 – 227 mg/L (Ceriodaphnia sp.)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sodium carbonate	497-19-8	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Sodium carbonate	497-19-8	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium carbonate	497-19-8	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

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 AICS 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:** 09-Feb-2022**Revision Note**SDS sections updated:
2**Full text of H-Statements referred to under sections 2 and 3**

H319 - Causes serious eye irritation

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 abbreviations 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/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/

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

SAFETY DATA SHEET

SODIUM BICARBONATE

Revision date: 30-Apr-2025

Revision Number: 39

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name SODIUM BICARBONATE

Product Code(s) HM001824

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Buffer

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	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. 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 dry location.

Incompatible materials Strong acids.

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 A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

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
Odour	Odourless.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8	
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	2.16	
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 acids.

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

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 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

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 6

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	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