



ENVIRONMENT PLAN SUMMARY

VENTOUX-1 WELL

MRE-EN-PLN-0021

29 APRIL 2025 VERSION 00



DOCUMENT INFORMATION

Contact

Dale Carter
Principal Environment
Energy & Lithium
E. dale.carter@mrl.com.au
P. (08) 9329 3600

Postal address
20 Walters Drive,
Osborne Park WA 6017

Revision History

Rev	Issue Date	Prepared by	Reviewed By	Approved By	Description
00	29/04/2025	I Sulaiman	D Carter	D Carter	Issued to DEMIRS for Acceptance

Acknowledgement of Country

MinRes is committed to reconciliation and recognises and respects the significance of Aboriginal and Torres Strait Islander peoples' communities, cultures, and histories. MinRes acknowledges and respects Aboriginal and Torres Strait Islander peoples as the traditional custodians of the land.

TABLE OF CONTENTS

Appendices	iii
Abbreviations	iv
1. Introduction	5
1.1 Background	5
1.2 Purpose, Objectives and Structures	5
1.3 Scope	5
1.4 Instrument Holder and Nominated Operator	5
2. Description of the Activity	6
2.1 Location of the Project	6
2.2 Overview of Activities	8
2.3 Timeframe and Schedules	8
3. Description of the Environment	10
3.1 Regional Landform and Climate	10
3.2 Geology and Soils	10
3.2.1 Geomorphology	10
3.2.2 Soils	10
3.3 Hydrology	10
3.3.1 Surface Water and Drainage	10
3.3.2 Groundwater	11
3.4 Vegetation	12
3.4.1 Flora	12
3.4.2 Declared Rare Flora and Priority Listed Flora	12
3.4.3 Environmentally Sensitive Areas	12
3.4.4 Ecological Community	13
3.5 Weeds and Pathogens	13
3.6 Fauna	13
3.7 Pest Vertebrate Fauna	13
3.8 Indigenous and Non-indigenous Cultural Heritage	13
3.8.1 Native Title Applications	13
3.8.2 Archaeology and Ethnology	13
3.9 National Heritage	13
3.10 Socio-economic Environment	14
3.10.1 Land Use and Economic Environment	14
3.10.2 Visual Amenity	14
4. Environmental Risk Assessment Methodology	15
5. Implementation Strategy	18
5.1 Integrated System Overview	18
5.1.1 Oil Spill Contingency Plan	18
5.2 Environment Plan Revision	19
6. Stakeholder Consultation and Identification	20
6.1 Ongoing Consultation	23
7. References	25

Figures

Figure 2-1: Regional Map	7
Figure 5-1: MinRes IMS.....	18

Tables

Table 2-1: Well Schedule.....	9
Table 4-1: Summary of environmental hazards, their associated aspects and management and mitigation measures.....	15
Table 6-1: Summary of stakeholder consultation and assessment of merits	20
Table 6-2: Summary of ongoing stakeholder engagement	23

Appendices

Appendix A Chemical Disclosure	

ABBREVIATIONS

Acronym / Word	Definition
ACHIS	Aboriginal Cultural Heritage Inquiry System
ALARP	As Low As Reasonably Possible
APPEA	The Australian Petroleum Production & Exploration Association
Camp	Main workforce camp located offsite
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DIDMS	Dieback Information Delivery and Management System
DoW	Department of Water
DPLH	Department of Planning, Lands and Heritage
DRF	Declared Rare Flora
DWER	Department of Water and Environmental Regulation
EPBC Act	Environment Protection and Biodiversity Conservation Act
ERL	Energy Resources Limited
ESA	Environmentally Sensitive Areas
GISERA	Gas Industry Social and Environmental Research Alliance
HSE	Health Safety and Environment
IMS	Integrated Management System
kL	Kilolitre
Km	Kilometre
LAA	Land Access Agreement
m	Meter
mm	Millimetre
MinRes	Mineral Resources Limited
NSHA	The Noongar Standard Heritage Agreement
OSCP	Oil Spill Contingency Plan
PEC	Protected Ecological Community
PGER(E)A	Petroleum and Geothermal Energy Resources (Environment) Regulations 2012 (WA)
PLF	Priority Listed Flora
PMST	Protected Matters Search Tool
PTW	Permit To Work
TDS	Total Dissolved Solids
TEC	Threatened Ecological Community
Well	Ventoux-1 Well
VSP	Vertical Seismic Profiling
Yued	Yued Aboriginal Corporation

1. INTRODUCTION

1.1 Background

Energy Resources Limited (ERL), a wholly owned subsidiary of Mineral Resources Limited (MinRes), is the titleholder and operator of the exploration permit EP 454 R1, located in the North Perth Basin. MinRes are proposing to drill an exploration Well, primarily targeting the Jurassic Yarragadee Formation containing potential stacked gas bearing sandstones.

The Well lays within the Shire of Coorow between the regional towns of Eneabba and Carnamah, approximately 40 km SW and (Figure 2-1). The Well is located on freehold land.

1.2 Purpose, Objectives and Structures

The associated Environment Plan (EP) (MRE-ENR-PLN-0007) and this summary document have been prepared in accordance with Regulation 11(7) of the *Petroleum and Geothermal Energy Resources Act 1967* (PGER Act) and in consideration of the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia – November 2024.

1.3 Scope

The Environmental Plan Summary (EP Summary) documents the operations and mitigation and management measures in the EP including:

- Site Preparation Operations;
- Well Operations (including drilling and completion operations, suspension or decommissioning of the Well);
- Well Test Operations;
- Site Reinstatement; and
- Care and Maintenance.

1.4 Instrument Holder and Nominated Operator

The instrument holder for Exploration Permit EP 454 is:

- Energy Resources Limited: 50% participating interest and operator
- Hancock Energy (PBN) Pty Ltd: 50% participating interest.

In accordance with the Petroleum and Geothermal Energy Resources (Environment) Regulations 2012 (WA) (PGER(E)R), contact details for the operator are listed below:

Operator: Energy Resources Limited

Contact Person: Neil Thompson, General Manager Exploration

Address: 20 Walters Drive, Osborne Park, Western Australia 6153

Phone: (08) 9329 3600

Email : neil.thompson@mrl.com.au

2. DESCRIPTION OF THE ACTIVITY

2.1 Location of the Project

The Well is situated within the Shire of Coorow, located approximately 40 km SW of Eneabba and SE of Carnamah (Figure 2-1).

The Well is located at the following:

- Ventoux-1: 29°58'17.34" S, 115°40'51.87" E

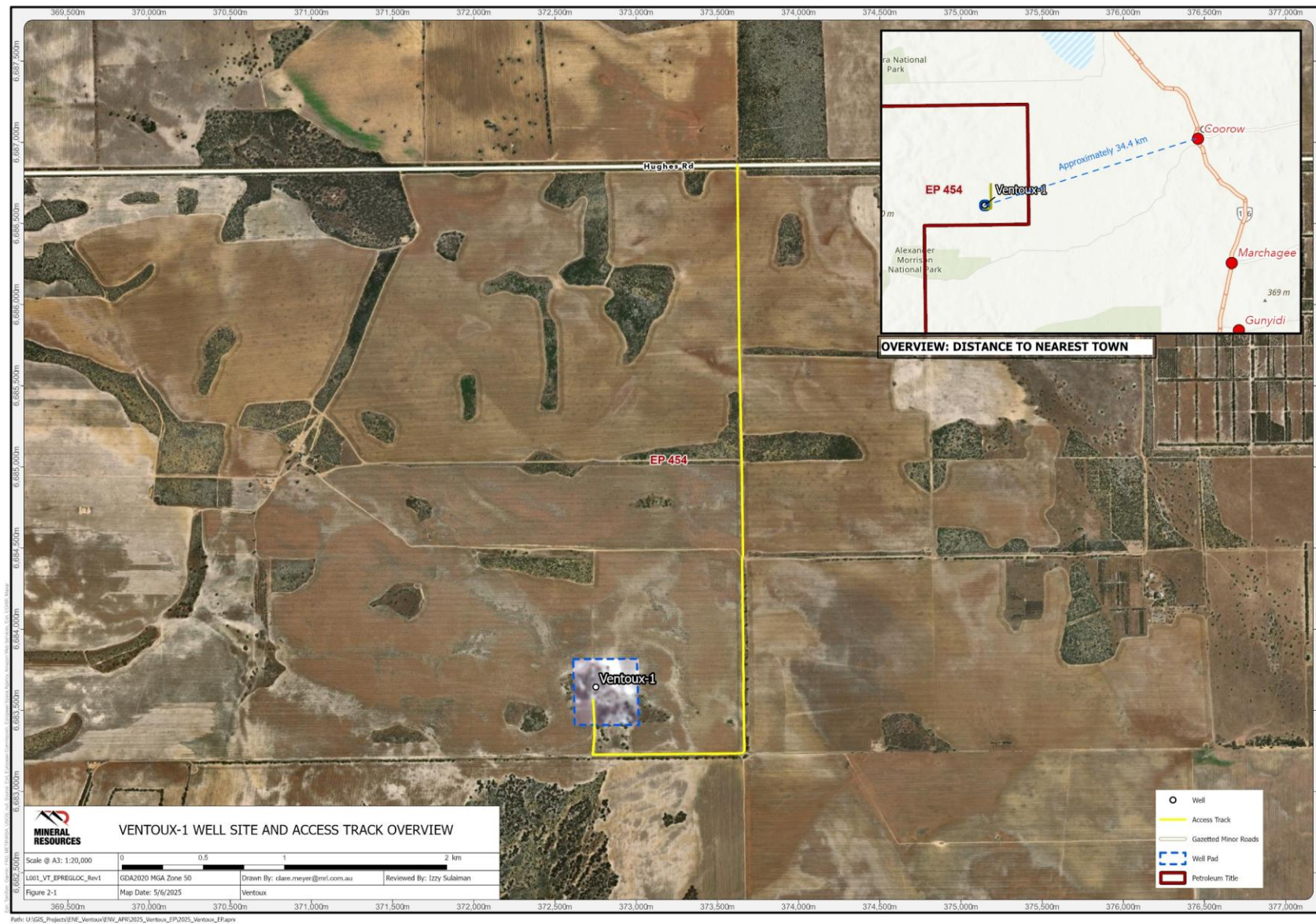


Figure 2-1: Regional Map

2.2 Overview of Activities

The activity involves the following key phases:

Site preparation operations:

- Well site construction – comprising clearing, levelling, sheeting and preparation of surfaces to support compressive loads and limit erosion to the existing landscape;
- Groundwater extraction bore / monitoring bore and conductor installation;
- Construction of the lined mud sump, turkey's nest, Vertical Seismic Profiling (VSP) pit and Well cellar; and
- Installation of the flare pits – drilling and Well test flare pits.

Drilling operations:

- Mobilisation of the drilling package, ancillary services, camp/s, personnel and supplies;
- Conducting the drilling activities;
- Evaluating the Well, suspension or decommissioning of the Well;
- Demobilisation of the drilling package, ancillary services, camp/s, personnel and supplies; and
- Completion activities (if the well is successful and not completed with the drilling rig);
 - Mobilisation of work-over rig package, ancillary services, personnel and supplies;
 - Conducting the Well completion activities; and
 - Demobilisation of work over rig package, ancillary services, site office, personnel and supplies.

Well Test Operations: (if the Well is successful)

- Construction of the Well test flare pit (if not done during site preparation operations);
- Mobilisation of the Well test package, ancillary services, personnel and supplies;
- Conduct the Well test activities to evaluate the Well; and
- Demobilisation of the Well test package, ancillary services, site support facilities, personnel and supplies.

Site Reinstatement operations, including sampling and removal of the:

- Drilling flare pit;
- VSP pit;
- Well test flare pit;
- Mud sump;
- Turkey nest; and
- Well head.

Care and maintenance operations – including inspection of the Well site and site infrastructure.

Well handover comprises the final administrative step after which the Environment Plan can be closed out.

2.3 Timeframe and Schedules

Activities covered under the EP are planned to commence in Q4 of 2025. A summary of the proposed schedule is provided as Table 2-1.

Table 2-1: Well Schedule

Activities	Approximate duration	Indicative timing	Environmental considerations
Site preparation operations	35 – 42 days	Q4 2025	12-hour operations (day light hours)
Mobilisation of drilling package, ancillary services, site office, main camp, personnel and supplies.	10 – 15 days	Q1 2026	Movement of vehicles and fauna impact potential
Drilling, evaluation, and suspension Or Drilling and Well decommissioning	56 – 65 days	Q2 2026	24-hour operations – fauna impact potential from driving at dawn / dusk General impact of site operations
Well completion	3 – 5 days	To be determined	24-hour operations – fauna impact potential from driving at dawn / dusk General impact of site operations
Well test and shut in or suspension	60 – 90 days	To be determined	24-hour operations - fauna impact potential from driving at dawn / dusk General impact of site operations
Care and maintenance	2 years	Subsequent to drilling	12-hour operations – fauna impact potential from driving at dawn / dusk

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Regional Landform and Climate

The Well is located within the coastal highlands of the Mid-West region of WA, within the Geraldton Hills Sandplain subregion of the Geraldton Sandplains Bioregion (Department of the Environment, 2012).

The Geraldton Sandplains Bioregion (Interim Biogeographic Regionalisation of Australia, Version 7) is composed of mainly proteaceous scrub-heaths, rich in endemics, on the sandy earths of an extensive, undulating, lateritic sandplain mantling Permian to Cretaceous strata (CALM, 2002).

The regional climate is classified as dry Mediterranean with cool wet winters and hot dry summers. The mean monthly minimum temperature recorded at the nearest Bureau of Meteorology station (Carnamah 008025) ranges from 8.6°C in August to 19.2°C in February and the mean monthly maximum temperatures range from 18.1 °C in July to 36.2°C in January (BOM, 2024). The average annual rainfall is 377mm with the majority of the rainfall occurring during the winter months and winds averages 15.6 km/h (Bureau of Meteorology 2022).

3.2 Geology and Soils

The Well location lies within the sedimentary Perth Basin. This basin lies both onshore and offshore and extends for about 700 km along the southern portion of the west coast of Western Australia. The basin is bounded to the east by the Darling Fault, which extends the full length of the basin. The onshore portion of the basin averages 65 km in width and extends from the southern coast to Geraldton in the north. The dominant feature in the northern section of the Perth Basin is the Dandaragan Trough, in which up to 20 km of sediments have been deposited.

3.2.1 Geomorphology

The Well is situated in the geomorphic unit 'Dandaragan Plateau' (Playford, Cockbain, & Low, 1976). The plateau is bounded to the west and southwest by the Dandaragan and Gingin scarps. The Dandaragan Plateau is a sand and laterite-capped plateau, overlaying Cretaceous sediments, which stands some 200 to 300 m above sea level in the central part of the Perth Basin. The surface of the plateau is flat to gently undulating, and for large areas it is essentially undissected (Playford, Cockbain, & Low, 1976).

3.2.2 Soils

The Well is located in the Greenough Province, in the soil landscape known as the Dandaragan Plateau Zone (code 222) (Schoknecht, Tille and Purdie 2004). This soil landscape is characterised by gently undulating plateaus with areas of sandplain and some laterite on Cretaceous sediments. It contains broad U-shaped valleys, 80-150 m deep, with smaller V-shaped valleys east of the Gingin scarp in the south, with soils formed from colluvium and weathered rock.

The soil system that overlaps the Well location as identified by the Department of Primary Industries and Regional Development (2022) is the Launer System (222La). It consists of sandplain of gently undulating to level plains with minor gently undulating rises, dunes are common; pale and sands with minor sandy earth and duplexes and sandstone.

3.3 Hydrology

3.3.1 Surface Water and Drainage

The Well location is situated in the Hill River and Tributaries surface water catchment (DWER, 2018). The Well is located approximately 20 km to the west of the Coonderoo River a major non-perennial water course. A major unnamed tributary is located approximately 5.9 km to the North and a minor unnamed tributary approximately 7.4 km to the south of the Well location. The tributaries feed into the Warradargee Creek in the north.

The following information is provided by the Department of Water on the hydrology of the Moore-Hill River catchment (DoW, 2017):

The Hill River has a catchment area of 3704 km². The river rises along the Dandaragan Scarp about 8 km east of Badgingarra, before flowing across the Arrowsmith region and Swan Coastal Plain. The river discharges into the Indian Ocean about 9 km south of Jurien Bay.

There have been two streamflow monitoring stations that have operated on the Hill River, with the most downstream site at Ardross operating since 1999. Annual streamflow ranges from 0.9 GL to 23 GL over the period 2000 to 2015 and the mean is 5 GL/a. Streamflow is highly seasonal, with over 95 per cent of flow occurring over winter from June to October.

The Hill River seasonally recharges the underlying Yarragadee aquifer in the eastern part of the catchment (Carter & Deshon 2002). It receives groundwater discharge from the Yarragadee aquifer upstream of Hill River Spring to Conover Pool, and recharges the Superficial aquifer near the coast, south of Jurien Bay (Commander 1981; Lindsay 2004). The downstream river reach contains numerous perennial seeps and permanent pools (WRC 2005) that are isolated in summer due to a lack of connected flow but become connected during higher flow periods in winter (Lindsay 2004). The salinity ranges from fresh upstream in areas overlying the Yarragadee aquifer through to marginal and brackish were associated with the Cattamarra Coal Measures.

3.3.2 Groundwater

The primary major aquifers of the northern Perth Basin are the Superficial, Leederville, Leederville–Parmelia and Yarragadee aquifers (DoW, 2017). A review of the National Groundwater Information System Australian Groundwater Insight aquifer boundaries data (Bureau of Meteorology, 2023) indicate that aquifers relevant to this Activity include the Leederville–Parmelia and Yarragadee Aquifers.

DWER (2024) provides information for depth to groundwater measured in water bores licenced / managed by the department. The nearest hydrological bore is located approximately 20 km to the north-west of the Well site. At this site the depth to the water table is 10.4 m. In the absence of nearby references, the groundwater level is expected to be similar at the Well site.

3.3.2.1 Leederville–Parmelia Aquifer

The Leederville–Parmelia aquifer extends from Mingenew to Gingin over an area of about 6650 km² beneath the Dandaragan Plateau, within a predominantly eastward-deepening portion of the Perth Basin (DoW, 2017).

The Leederville–Parmelia aquifer thickens eastward from the margin of the Otorowiri Formation outcrop, reaching a maximum thickness of about 1300 m west and south of Moora, but elsewhere it is generally between 300 and 500 m thick (DoW, 2017).

Groundwater salinity in the Leederville–Parmelia aquifer ranges from 200 mg/L to 4500 mg/L except along the eastern margin of the aquifer but is mostly between 500 and 1000 mg/L TDS (Commander, 1981; Bekele, Salama, & Commander, 2006).

In the western part of the aquifer, groundwater with less than 500 mg/L TDS is associated with paleo drainage valleys (Commander, 1981). Groundwater with a salinity of about 200 mg/L TDS is also present east of Eneabba Spring (Commander 1981).

Groundwater within the Leederville–Parmelia aquifer is recharged in outcropping areas by direct rainfall recharge. Groundwater recharge rates are probably highest just east of the Dandaragan Scarp where valleys infilled with sand are widest and easterly formational dips allow rapid infiltration of rainfall and seepage from valley slopes and ephemeral swamps along bedding planes (Commander, 1981).

3.3.2.2 Yarragadee Aquifer

The major aquifer which underlies the Well location is the Yarragadee Aquifer. The formation is multi-layered with groundwater occurring within beds of fine to coarse-grained sandstone confined between thick sequences of shale and siltstone. The potentiometric surface is fairly deep, ranging up to as much as 150 m below the surface. The potentiometric surface reaches the ground surface in the Hill River valley where the aquifer is artesian around Hill River Spring (Earth Tech Engineering, 2002)

Groundwater salinity is lowest (500-700 mg/L) within the middle of the catchment and highest (1,000-1,500 mg/L) towards the east of the catchment along the boundary with the Urella Fault (Earth Tech Engineering, 2002). Areas of higher salinity occur along the Arrowsmith River and the Irwin River due to recharge of brackish runoff water. Groundwater salinity is also known to vary within the different sandstone beds and there is a general trend of increasing salinity with depth (Johnson S L and D P Commander, 2006).

Potential bore yields are very large with up to 6000 kL/day achieved at Eneabba (Johnson S L and D P Commander, 2006). The major bore fields are at Allanooka, supplying Geraldton; however, the aquifer is also used for town water supply at Badgingarra, Dongara and Denison (Johnson S L and D P Commander, 2006).

The recharge for this aquifer occurs primarily to the west of the Dandaragan Scarp where the aquifer is unconfined and occurs by direct infiltration of rainfall, downward leakage from the Arrowsmith River and overlying formations. Nidagal (1995) noted that most groundwater discharges from the Yarragadee Formation into the Tamala Limestone with minor discharge into the Cattamarra Coal Measures across the Beagle Fault. Groundwater movement of the aquifer and overlying superficial aquifer is towards the coast (Earth Tech Engineering, 2002).

3.4 Vegetation

The Ventoux-1 well site is located within a cleared paddock that has been historically used for agricultural purposes. Historically, the pre-European vegetation association of the area was Tathra_379 and is described as mixed heath with scattered tall shrubs *Acacia spp.*, *Proteaceae* and *Myrtaceae*. These vegetation communities are more widespread through the Wheatbelt of Western Australia, and also occur in the Esperance Plains, Mallee, Coolgardie, Murchison and Yalgoo IBRA regions (Ecoscape, 2010). Some native vegetation is present surrounding the proposed well location which is regrowth following previous disturbance. No native vegetation will be cleared under this EP.

3.4.1 Flora

A desktop assessment conducted by (Strategen JBS&G, 2021) over the proposed site, with field survey in the vicinity of the Well site (within 500m) identified six vegetation communities. The vegetation types that were surveyed and located closest to the Well site were described as '*Eucalyptus wandoo* subsp. *Wandoo* open woodland over mixed chenopod shrubland' and '*Eucalyptus tottiana* open low woodland over mixed shrubland with species including *Banksia sphaerocarpa* var. *sphaerocarpa*, *Jaksonia floribunda*, *Melaleuca leuropoma* and *Verticordia chrysanthella*'. None of the vegetation communities identified within the survey areas have been associated with known Groundwater Dependent Ecosystems (GDE) or priority communities. The closest potential GDE as identified by the Bureau of Meteorology's Groundwater Dependent Ecosystems Atlas (2024) is located greater than 15 km from the Well site.

The proposed Ventoux-1 Well is located within a cleared paddock. No native vegetation will be cleared under this EP.

3.4.2 Declared Rare Flora and Priority Listed Flora

A desktop assessment (with a 5-10 km buffer) by JBS&G (2021) identified 39 Threatened flora and 62 Priority flora species that have been recorded in the local area. This was supplemented by an additional search of the Protected Matters Search Tool (PMST) in 2024 (DCCEEW, 2024). The field assessment conducted by JBS&G (2021) in the vicinity of the Well site (within 500m) did not record any threatened flora species. However, five Priority 3 species and two Priority 4 flora taxa were identified during the nearby survey.

The proposed Ventoux-1 Well and all associated works are located within a cleared paddock or existing farm access tracks. As such, no native vegetation is proposed to be impacted.

3.4.3 Environmentally Sensitive Areas

ESAs are declared under section 51B of the *EP Act* and protected under the Native Vegetation Regulations. ESAs are selected for their environmental values at state or national levels and may include:

- defined wetlands and riparian vegetation within 50 m;
- areas covered by Threatened Ecological Communities;
- area of vegetation within 50 m of DRF; and

- declared World Heritage property sites.

The closest designated is a small unnamed ESA located approximately 5.1 km to the northeast of the Ventoux-1 Well location.

3.4.4 Ecological Community

Given that the Well site is located within a cleared paddock, no ecological communities will be impacted. The nearest known Threatened or Priority Ecological Community is located greater than 20 km from the Well site.

3.5 Weeds and Pathogens

Given the proposed activity is within highly disturbed cleared paddocks, there is the potential for weeds and pathogens to be present. A survey of the area in 2021, recorded 19 species within vicinity of the Well locations. It is expected that the number of species and their abundance is higher at the Well site as it is a cleared paddock in comparison to the remnant native vegetation surveyed.

3.6 Fauna

A desktop and field assessment conducted by JBS&G (2021) in the vicinity of the Well site identified 17 fauna species of conservation significance that could potentially occur. The desktop assessment utilised a 5-10 km buffer and was supplemented by an additional search of the PMST in August 2024 (DCCEE, 2024). This consisted of 12 birds, two mammals, two reptiles and two invertebrates. The additional search identified the southern whiteface, a species listed since the time of the desktop in 2021.

3.7 Pest Vertebrate Fauna

The *Biosecurity and Agriculture Management Act 2007* (WA) allows pest animals that have a negative impact on agricultural production and the environment to be declared. The declared species are listed with a corresponding category which determines the level of management required to control these species.

The Protected Matters Search Tool reports the following ten introduced species with the potential to occur in the vicinity of the Well site.

3.8 Indigenous and Non-indigenous Cultural Heritage

3.8.1 Native Title Applications

A search of the National Native Title Tribunal database (<http://www.ntv.nntt.gov.au/ntv.asp>) on 8 May 2024 indicated that Native Title has been determined not to exist over the Operational Area (Tribunal No. WCD2021/010). The Operational Area is located within the lands of the Yued People represented by the Yued Aboriginal Corporation.

A Noongar Standard Heritage Agreement (NSHA) signed by MinRes and the SWALSC on behalf of the Yued Agreement Group in respect to petroleum exploration EP 454 provides a framework for the conduct of heritage surveys and heritage protection in line with state and federal legislation. All Project activities will occur in adherence with the signed NSHA for EP 454.

3.8.2 Archaeology and Ethnology

Searches of the ACHIS, maintained by the Department of Planning, Lands and Heritage (DPLH) have been undertaken for the Well site considered in this EP. The searches show that there are no registered aboriginal heritage sites within EP 454 R1.

3.9 National Heritage

There are no National Heritage places within proximity of the Well locations. The closest Natural Heritage Property is the Alexander Morrison National Park, located greater than 7.5 km to the south of the Well site.

A search of the State Heritage Register recorded 56 Heritage Places within the Shire of Coorow, with the majority occurring within the vicinity of Coorow townsite approximately 34 km to the east.

3.10 Socio-economic Environment

3.10.1 Land Use and Economic Environment

The Shire of Coorow's major industry is agriculture. The major tourism drawcards for the Shire are the historical town centre and wildflowers during the wildflower season.

The current land use for the Well site is for agricultural purposes except as otherwise described in Section 3.4 of the EP.

3.10.2 Visual Amenity

The Well site is located approximately 3 km from Hughes Road and 5 km from Chelsea Road. Access to the Well site is expected to occur from Hughes Road. There are four Sensitive Receptors known within 5 km of the Well site. The nearest dwelling to the Ventoux-1 Well location (Sensitive Receptor A) is located approximately 2.3 km to the north-west.

The Well site is located away from residential developments and local tourist attractions, with drilling operations being a relatively short-term activity.

4. ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY

In accordance with Regulation 14(3)(c) of the PGER(E)R, this Section provides the methodology used to identify and assess the environmental impacts and risks associated with the activities.

The risk assessment for this EP was undertaken in accordance with MinRes' risk management process, as detailed within the EP. This approach aligns with the processes outlined in ISO 31000:2018 Risk Management – Principles and Guidelines (ISO, 2018) and Handbook 203:2012 Managing Environment-related Risk (Standards Australia, 2012).

Risk management – Principles and guidelines. Hazards, their associated aspects and their associated management and mitigation measures are detailed below in Table 4-1.

Table 4-1: Summary of environmental hazards, their associated aspects and management and mitigation measures

Aspect	Hazard	Management and Mitigation Measures
Physical Interaction – Soil and Vegetation	- Spread of non-indigenous species (weeds / pathogens) - Damage to heritage sites / artefacts - Unintentional clearing of native vegetation - Inadequate site reinstatement	- Induction - Demarcation of clearing area - Construction fill verified as having low weed / dieback risk - Hygiene management requirements - Desktop heritage evaluation - Consultation - Land Access Agreement - Heritage artefact identification procedure - Complaints management system - Monitoring of areas to be reinstated
Noise Emissions	Noise emission disturbance of nearby occupied residential housing from drilling operations and Well testing	- Well test design and use of engineering controls - Noise modelling - Temporary alternative accommodation for Residents - Compliance with Noise Regulations (1997) - Consultation - Complaints management system
Light Emissions	Light emission disturbance of local landowners or sensitive fauna	- Temporary landowner alternative accommodation - Consultation - Light orientation - Complaints management system

Dust Emissions	Dust emission disturbance of local landowners or sensitive fauna	- Dust suppression - Consultation - Speed limits - Complaints management system
Atmospheric Emissions	Disturbance to sensitive fauna / relevant stakeholders	- Emissions are monitored and reported - Complaints management system - Use of pilot flame during flaring, - National Greenhouse and Energy Reporting
Extraction of Groundwater	Damage to vegetation due to drawdown of shallow groundwater	- Groundwater licences - Meter calibration and monitoring
Physical Interaction – Fauna	Injury or fatality to terrestrial fauna	- Induction - Fauna exclusion and egress - Site inspections - Speed limits
Fire	- habitat and vegetation loss; - fauna injury / fatality; and - damage to adjacent pastoral lands and crops.	- Induction - Fire breaks - Gas flaring exemption - Bush Fires Regulations 1954 (WA) - Permit to Work (PTW) - Consultation - Emergency Response Plan - Engagement with DFES - Subscription to local fire notifications - Maintain firefighting equipment
Erosion / Contamination surface water run-off	Unplanned disturbance to adjacent pastoral land / soil contamination	- Soil (and vegetation) stockpiling - Mud sump design - Inspection of sumps - HSE Inspection
Accidental release of drilling or completion fluid	- Surface spill of drilling or completion fluid resulting in contamination of soil / useable groundwater aquifers; - Subsurface spill of drilling fluid resulting in contamination of useable groundwater aquifers.	- Rig inspection - Surface casing cemented across all useable freshwater aquifers - Bund construction - Site will be manned 24 hours a day - Chemical disclosure - Low toxicity drilling fluid - OSCP

		• Fugitive discharges are monitored and reported • Soil sampling • Monitoring of groundwater
Accidental release of solid waste	• Environmental pollution and attraction and / or injury of protected fauna species within the vicinity of the Well locations.	• Induction • Appropriate rubbish bins and waste segregation • Appropriately licensed waste contractor • Waste licensing • Waste sampling • Waste register
Accidental release of Hydrocarbons or Hazardous Materials (excluding Loss of Well Control [LOWC])	• Contamination of soil / groundwater	• Induction • Solid (dry) chemical storage requirements • Chemical and hazardous liquid material storage • Dangerous goods storage requirements • Spill protection during refuelling • Spill kits • Well Testing - equipment pressure testing • Well Testing - Emergency Shut-Down • OSCP • Emergency Response Plan • Soil sampling • Monitoring of groundwater
Accidental Release of Hydrocarbons - LOWC	• Atmospheric emissions • Contamination of soil / groundwater • Fire	• Induction • Well Management Plan • HSE Management System Bridging Document / Safety Case Revision • Blow out control equipment and expertise • Spill Kits • OSCP • Emergency Response Plan • Monitoring of groundwater

5. IMPLEMENTATION STRATEGY

To meet the requirements of Regulation 15(1) of the PGER(E)R, Implementation Strategy for the EP, this Section describes the implementation strategy—the systems, practices, and procedures used to ensure that the environmental impacts and risks of the activities are continuously reduced to ALARP, and the environmental performance objectives and standards detailed in Section 5 are achieved.

5.1 Integrated System Overview

The MinRes Integrated Management System (IMS) aligns with the Plan/Do/Check/Act approach. Figure 5-1 illustrates how the MinRes IMS elements fit this model

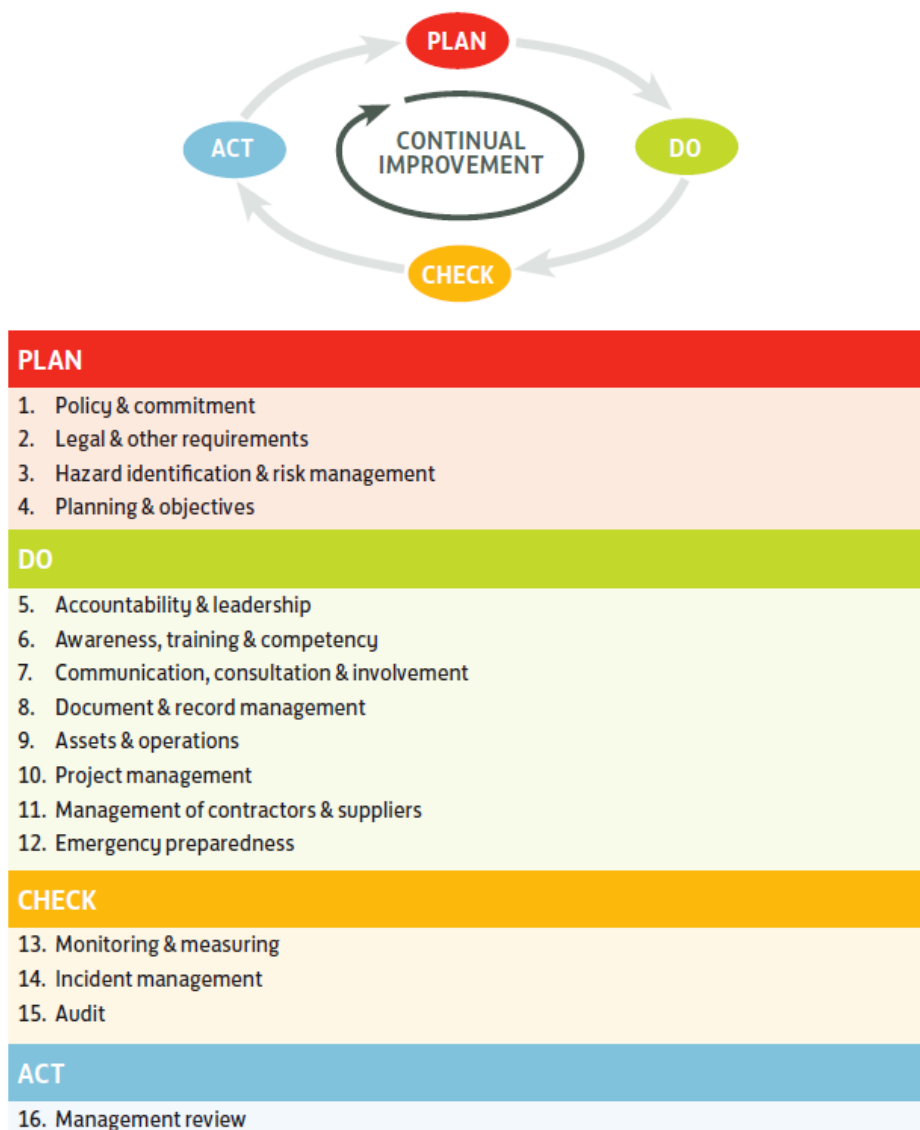


Figure 5-1: MinRes IMS

5.1.1 Oil Spill Contingency Plan

The MinRes North Perth Basin Well Operations OSCP (EOC-EN-PLN-0005) outlines the response structure and considers the four key aspects of prevention, preparedness, response and recovery. An OSCP is required to set out the following:

- preparations are on hand for the possibility of an oil spill;
- emergency response arrangements are implemented if an oil spill occurs; and
- recovery arrangements are implemented if an oil spill occurs.

The OSCP describes the Emergency Management framework that is in place to ensure any emergency events are managed effectively.

5.2 Environment Plan Revision

Regulation 18 of the PGER(E)R requires that MinRes reviews and submits a proposed revision of the accepted EP:

- before the commencement of a new activity;
- or any significant modification, change of a new stage of an existing activity; and
- before, or as soon as practicable after, the occurrence of any significant new environmental impact or risk, or significant increase in an existing environmental impact or risk which occurred or is to occur.

Additionally, Regulation 20 of PGER(E)R requires that MinRes submits a proposed revision of the EP five years from the date when the EP is accepted by the Minister.

6. STAKEHOLDER CONSULTATION AND IDENTIFICATION

Minimising and mitigating the potential environmental impacts associated with the Well activities is assisted by the engagement of key stakeholders to ensure all issues are identified and addressed.

In accordance with Regulation 17 of PGER(E)R, MinRes completed a scoping exercise to determine which authorities, persons and organisations were considered to be relevant.

Given the isolated location of the Well location, limited stakeholders were identified but include:

- Department of Energy, Mines, Industry Regulation and Safety (DEMIRS);
- Department of Water and Environmental Regulation (DWER);
- Department of Planning, Lands and Heritage (DPLH);
- Shire of Gingin;
- South West Aboriginal Land and Sea Council;
- Yued People (Traditional Owners); and
- Landowners.

In addition to these stakeholders, MinRes also identified other contractors that may be called upon in the event of a major spill to support response and recovery operations. Although not relevant to the petroleum activities, they were identified and may be consulted over the course of the program. These companies include:

- Lenane Holdings civil earthworks;
- Toxfree;
- Clean away; and
- SGS.

A summary of the consultation with these stakeholders is included as Table 6-1.

Table 6-1: Summary of stakeholder consultation and assessment of merits

Stakeholder	Date	Summary of consultation	Objections / claims raised	MinRes response	Close out of issues (if any)
Landholder	1 March 2024	Phone call introduction providing overview of project.	Landholder was amenable to discussing further.	MinRes committed to providing information via email.	N/A
Landholder	24 March 2024	Introduction letter sent to landholder detailing proposed drilling activities and request to meet.	No response received.	Follow-up email sent on 18 April 2024.	N/A
Landholder	14 May 2024	Follow-up phone call to landholder to request a meeting.	Meeting agreed.		N/A

Stakeholder	Date	Summary of consultation	Objections / claims raised	MinRes response	Close out of issues (if any)
Landholder	27 May 2024	Meeting with landholder to discuss well proposal and present draft access deed.	Landholder requested MinRes to provide contact details for a landholder who has an existing well. General discussion and questions. Landholder was receptive and agreeable to a well being drilled on their land	Provided contact details for third party landholder.	Provided draft land access agreement.
Landholder	5 September 2024	Site visit with occupier to discuss project.	Discussions were held on the proposal and MinRes' plans for exploration. Occupier was supportive of the project. The Occupier was informed that the preference of MinRes to have an agreement with the Landholder, where the occupier would then be provided a chance to comment on the terms of access and compensation.	MinRes to provide an agreement to the Landholder for review and comment, referencing the Occupier's rights and occupation of the Lot.	N/A
Landholder	7 October 2024	Email sent to landholder providing project update including three pad site locations. Request for feedback on draft land access agreement.	No Response.	Follow-up phone call and email sent to landholder on 16 October 2024.	N/A
Landholder	28 November 2024	Site visit with occupier to discuss project, survey the site for the ideal well pad location and the availability of gravel.	The location of the well pad was discussed and agreed with the Occupier. The Occupier informed MinRes that he would be cropping the well pad area in the 2025 harvest season and that he would be clearing some trees in the well pad area	MinRes would consider the comments on the location of the pad and the landholder's preference for the access track.	N/A

Stakeholder	Date	Summary of consultation	Objections / claims raised	MinRes response	Close out of issues (if any)
			to allow for the broad-acre farming. The location of the access track was also discussed. Gravel is available from the property, for sale by the owner/occupier.		
Landholder	4 December 2024.	Follow-up email sent to landholder requesting feedback.	No Response.		N/A
Landholder	13 January 2025	Email sent to landholder providing final pad site location.	Landholder requested that the draft access agreement to be revised to include the updated pad location.	Revised access agreement provided to landholder on 21 January 2025.	N/A
Landholder	3 February 2025	Landholder provided feedback on draft access agreement and requested additional compensation.	Additional compensation sought. Minor changes to the terms of the access deed.	MinRes provided a response on 28 February which largely accepted the modified terms in the access deed but rejected the increase in compensation.	N/A
Landholder	12 March 2025	Phone call with landholder to follow-up.	Landholder was not satisfied with the amended access deed and rejected the proposed compensation. The landholder advised that they will commence seeding from 1 April and are likely to be unresponsive in that time.		N/A
Landholder	24 March 2025	MinRes provided a written response to the landholder that addressed the matter of compensation. A revised access agreement was issued and requested feedback within 14 days.	Landholder responded on 26 March 2025 advising that they accept the revised terms of the access deed.	MinRes requested that the Landholder provide a copy of the access agreement that's executed by both Landholder and Occupier.	N/A
South West Aboriginal Land	April 2025	MinRes issued an activity notice to	N/A	N/A	N/A

Stakeholder	Date	Summary of consultation	Objections / claims raised	MinRes response	Close out of issues (if any)
and Sea Council (SWALSC)		SWALSC, in accordance with the NSHA for EP 454. This notice was to be provided to the Yued Cultural Committee for their assessment.			
Landholder	7 April 2025	Follow-up email sent.	No response.		N/A
Landholder	28 April 2025	Follow-up phone call.	No response.		N/A
Landholder	6 May 2025	Follow-up email sent.	No response.		N/A
SWALSC	13 May 2025	SWALSC provided a response to the activity notice confirming that a survey is required.	N/A	N/A	N/A
Shire of Coorow	May 2025	Consultation with the Shire regarding MinRes's planned exploration activities in the area.	N/A	Letter and information pack provided to the Shire.	N/A

6.1 Ongoing Consultation

MinRes will continue to engage with identified relevant stakeholders for the duration of the project. MinRes plans to be operating in the Perth Basin for a long time, and wishes to ensure we are seen as a valued and respected member of the communities we will be working in. MinRes aims to ensure all dealings with the community are transparent and based on honesty and integrity.

MinRes is committed to working with the local community to ensure people are kept informed and can ask questions and raise issues if required. All questions, feedback or concerns are considered and responded to. Some of the stakeholder engagement activities related to the Well and other activities in the Perth Basin are summarised in Table 6-2.

Table 6-2: Summary of ongoing stakeholder engagement

Engagement	Process/Activity	Rationale
Landowner meetings	Ensure suitable timing to landowner for meetings.	Used for consultation about land access agreements for flora and fauna surveys and seismic activities.
1:1 face-to-face meetings	Special face to face meetings with key stakeholders on as needs basis.	Used for consultations with decision making authorities, regulatory agencies, Traditional Owners, industry peers, community groups and individual stakeholders.
Letters and direct correspondence	Targeted correspondence providing information on planned Well operations will be provided to specific stakeholders as appropriate. This correspondence may offer further contact or seek comments or feedback, as appropriate.	Used for specific stakeholders with specific areas of interest.

Site visits	Site visits to drilling and seismic activities, demonstrating transparency of the work and its impacts on local environment	Offered to interested stakeholders to visually demonstrate Well activities in progress on an as needs basis.
Face to face information and Q&A sessions	Targeted meetings will be convened with key stakeholders and community groups on an as needs basis, to address specific issues.	Used for consultations with decision making authorities, regulatory agencies, Traditional Owners, industry peers, community groups and individual stakeholders
Facts sheets	Collaborative industry information obtained from technical specialists, peers, APPEA, GISERA, DoW, DEMIRS.	Used to educate stakeholders on operational capability and explain how MinRes plans to manage key issues / risks. Content will be presented in an informative, but non-technical way. Visual element essential. May also be used for public events such agricultural shows and other community events.

7. REFERENCES

- Baddock, L.J., and A. Lach. (2003). *Jurien hydrogeological investigation report: evaluation and modelling*. Water Corporation.
- Bekele, E. B., Salama, R. B., & Commander, D. P. (2006). *Hydrogeology and hydrochemistry of the Parmelia aquifer, northern Perth Basin*. Australian Journal of Earth Science, vol. 53.
- BOM. (2024). *Climate Data Online*. Bureau of Meteorology. Retrieved from <http://www.bom.gov.au/climate/data/index.shtml>
- BoM. (2024). *Groundwater Dependent Ecosystems Atlas*. Bureau of Meteorology. Retrieved from <http://www.bom.gov.au/water/groundwater/gde/>
- Bureau of Meteorology. (2023). *Climate statistics for Australian locations*. Retrieved from http://www.bom.gov.au/climate/averages/tables/cw_009037.shtml
- CALM. (2002). *Bioregional summary of the 2002 Biodiversity Audit of Western Australia - Geraldton Samplain 3 (GS3 - Lesueur Sandplain subregion)*. Australia.
- Commander, D. P. (1981). *The hydrogeology of the Eneabba area*. University of Western Australia. unpublished.
- DCCEEW. (2022). *Australian Heritage Database*. Retrieved 2021, from <https://www.environment.gov.au/cgi-bin/ahdb/search.pl>.
- DCCEEW. (2022). *Protected Matters Search Tool*. Retrieved October 4, 2022, from <https://pmst.awe.gov.au/#/map?lng=131.52832031250003&lat=-28.671310915880834&zoom=5&baseLayers=Imagery,ImageryLabels>
- DCCEEW. (2024). *Protected Matters Search Tool*. Department of Climate Change, Energy, the Environment and Water. Retrieved from <https://www.dcceew.gov.au/environment/epbc/protected-matters-search-tool>
- Department of Conservation and Land Management. (2002a). *Bioregional Summary of the 2002 Biodiversity Audit for Western Australia - Swan Coastal Plain 1 (SWA1 - Dandaragan Plateau subregion)*. Government of Western Australia.
- Department of Primary Industries and Regional Development. (2022). *Soil-landscape systems Western Australia*.
- Department of the Environment. (2012). *Interim Biogeographic Regionalisation for Australia (Subregions - States and Territories) v. 7 (IBRA) [ESRI shapefile]*. Retrieved from <https://www.environment.gov.au/fed/catalog/main/home.page>
- Department of the Environment. (2012). *Interim Biogeographic Regionalisation for Australia (Subregions - States and Territories) v. 7 (IBRA) [ESRI shapefile]*.
- DoEE. (2016). *Eucalypt Woodlands of the Western Australian Wheatbelt: a nationally protected ecological community*. Department of the Environment and Energy. Australian Government. Retrieved from <https://www.dcceew.gov.au/sites/default/files/documents/guide-eucalypt-woodlands-wa-wheatbelt.pdf>
- DoW. (2017). *Northern Perth Basin: Geology, hydrogeology and groundwater resources, Hydrogeological bulletin series, report no. HB1*. Department of Water. Perth: Government of Western Australia.
- DPLH. (2024). *Aboriginal Heritage Inquiry System*. Government of Western Australia, Department of Planning, Lands and Heritage.
- DWER. (2018). *Surface Water Management Subareas (DWER-042)*. Department of Water and Environment Regulation. Retrieved from <https://catalogue.data.wa.gov.au/dataset/surface-water-management-subareas>
- DWER. (2022). *Nambung River*. Government of Western Australia.
- DWER. (2024). *Perth Groundwater Map*.
- Earth Tech Engineering. (2002). *West Midlands Hydrology Project Stage One Report: The Impact of Hydrological Issues on Biodiversity and Agriculture in the West Midlands Region*.
- Eco Logical. (2022). *Flora and Vegetation Survey: Dandaragan Deep-1 Well Site*. Perth: Energy Resources Limited.
- Ecoscope. (2010). *Dongara to Cape Burney Coastal Vegetation Survey - Northern Agricultural Catchment Council*.
- Gaia Resources. (2022). *Dieback Information Delivery and Management System*. Retrieved October 6, 2022, from <https://didms.gaiaresources.com.au/>
- Government of Western Australia. (2023). *Heritage Places*. Heritage Council. Retrieved from <https://inherit.dplh.wa.gov.au/Public/>
- Heritage Council. (2022). *InHerit – State Heritage Office database*. Retrieved October 6, 2022, from <http://inherit.stateheritage.wa.gov.au>.
- Heritage Council. (2022a). *Kolburn - heritage place*. Retrieved October 6, 2022, from <http://inherit.stateheritage.wa.gov.au/Public/Inventory/Details/0bea8c26-dbd7-427a-9077-03b8b8e5f717>.
- ISO. (2018). *Risk management*. Australia. Retrieved from <https://www.iso.org/standard/65694.html>

- Johnson S L and D P Commander. (2006). *Mid West Regional Minerals Study – Groundwater Resource Appraisal*. Department of Water.
- Playford, P. E., Cockbain, A. E., & Low, G. H. (1976). *Geology of the Perth Basin Western Australia*. Geological Society of Western Australia, Bulletin 124.
- Schoknecht, N., Tille, P., & Purdie, B. (2004). *Soil-Landscape Mapping in South-Western Australia. Resource Management Technical Report 280*. Perth: Department of Agriculture.
- Shire of Dandaragan. (2020). *Envision 2029 - Economic and Tourism Development Strategy*. Retrieved October 6, 2022, from https://www.dandaragan.wa.gov.au/Profiles/dandaragan/Assets/ClientData/Document-Centre/publications/Economic_and_Tourism_Development_Strategy_2029.pdf
- SLR. (2024). *Gingin Brook Exploration Well - Reconnaissance Flora and Basic and Targeted Fauna*.
- SLR. (2024). *Gingin Brook Exploration Well - Reconnaissance Flora and Basic and Targeted Fauna*. Unpublished report prepared for Mineral Resources Limited.
- Standards Australia. (2012). *Managing environment-related risk*. Australia.
- Stelfox, L. (2001). *Assessment of potential groundwater contamination from the Moore River*. Perth: Water and Rivers Commission. Government of Western Australia. .
- Stratagen JBS&G. (2021). *Charger 2D Seismic Survey - Ecological Desktop Assessment and Survey*. Unpublished Report for Energy Resources Limited.
- Stratagen JBS&G. (2021). *Charger 2D Seismic Survey Ecological Desktop Assessment and Survey*. Unpublished report prepared for Energy Resources Limited, Perth, Western Australia.



APPENDIX A

CHEMICAL DISCLOSURE



Mineral Resources Limited

20 Walters Drive
Osborne Park Perth 6017

Locked Bag 13, Osborne Park DC, WA 6916

P +61 8 9329 3600

E reception@mineralresources.com.au

W www.mrl.com.au

1. Drilling Fluid Chemical Disclosure

A. SYSTEM DETAILS:	
OPERATOR:	Mineral Resources Limited
PROJECT / WELL NAME:	Ventoux-1 Well
SYSTEM:	Drilling Fluids, HT Logging Pill & Completion Brine
TOTAL VOLUME OF SYSTEM (m³):	*3180 m³ per well

* includes 100% contingency volume

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
Water	N/A	Base Fluid	Bore water sourced onsite	68.75%	N
Barite / API Barite	Newpark	Weighting Agent	<u>Constituents:</u> BARIUM SULPHATE QUARTZ (CRYSTALLINE SILICA) <u>Toxicity:</u> Low toxicity. Under normal conditions of use, adverse health effects are not anticipated. QUARTZ (SILICA CRYSTALLINE) (14808-60-7) LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis) <u>Aquatic toxicity:</u> Fish Toxicity LC50 (Rainbow trout) > 7500 ppm/96hrs. LC50 (Fresh Water Trout) > 21,000 ppm/96hrs. LC50 (Salt Water StickleBack) > 56,000 ppm/96hrs. <u>Biodegradation/bioaccumulation:</u> Barium sulphate (major ingredient of barite (60-100%)) is insoluble in water and not biodegradable. Not expected to bioaccumulate.	0.19%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. OCNS Rated E - 24310, Exp 09/08/2021		
NewGel / Bentonite / Maxigel / API Bentonite	Newpark	Viscosifier	<u>Constituents:</u> BENTONITE QUARTZ (CRYSTALLINE SILICA) SODA ASH <u>Toxicity:</u> The main component/s of this product are not anticipated to cause any adverse effects to plants or animals. QUARTZ (SILICA CRYSTALLINE) (14808-60-7) LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis) BENTONITE (1302-78-9) LD50 (intravenous) 35 mg/kg (rat) LD50 (oral): >2000mg/kg (rat) LDLo (intravenous) 10 mg/kg (dog) Inhalation LC 50: >5.27 mg/L, 4hr (rat) <u>Ecotoxicity Data:</u> Bentonite (1302-78-9) EC50 Daphnia > 100 mg/l, 48 hours EC50 Freshwater algae > 100 mg/l, 72 hours LC50 Freshwater fish 16000 mg/l, 96 hours LC 50 Marine water fish 2800 - 3200 mg/l, 24 hours EC50 Coon stripe shrimp (<i>Pandalus danae</i>) 24.8 mg/l, 96 hours EC 50 Dungeness or edible crab (Cancer magister) 81.6 mg/l, 96 hours LC50 Rainbow trout, donaldson trout (<i>Oncorhynchus mykiss</i>) 19000 mg/l, 96 hours <u>Persistence and degradability:</u> Not relevant for inorganic substances <u>Mobility:</u> Low water solubility, expected to sink and migrate into the sediment. Expected to partition to	2.00%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			sediment and wastewater solids. <u>Bioaccumulation:</u> Will not bio-accumulate. <u>Other adverse effects:</u> No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. OCNS Rated E - 26210 Exp 01/02/2021		
Potassium Chloride	Newpark	Shale swelling inhibition (smectite & illite clays)	<u>Constituents:</u> POTASSIUM CHLORIDE <u>Toxicity:</u> Acute toxicity: LD50 (Ingestion): 1500 mg/kg (mouse) LD50 (Intraperitoneal): 620 mg/kg (mouse) LD50 (Intravenous): 117 mg/kg (mouse) LDLo(Ingestion): 20 mg/kg (man) LDLo (Intraperitoneal):900 mg/kg (guinea pig) LDLo (Intravenous): 77 mg/kg (guinea pig) LDLo (Subcutaneous): 2120 mg/kg (frog) TDLo (Ingestion): 60 mg/kg/days (woman) <u>Ecotoxicity:</u> In short-term acute toxicity tests with fish, daphnia and algae the following results were found (lowest test result values): <i>Ictalurus punctulus</i> 48h-LC50 = 720 mg/l; <i>Daphnia magna</i> : 48h-LC50 = 177 mg/l; <i>Nitzschia linearis</i> : 120 h-EC50 = 1337 mg/l. A chronic reproductive test with the invertebrate <i>Daphnia magna</i> gave a LOEC of 101 mg/l. All the studies compiled on the acute and chronic aquatic toxicity were > 100 mg/L. Thus, it is concluded that KCl is not hazardous to freshwater organisms. Taking into considerations the background concentrations of KCl in seawater (380 mg/l K+ and 19,000 mg/l Cl-), it is concluded that there is no reason for further investigations of KCl on marine species. The low concern for the environment is supported by the absence of a bioaccumulation potential for the substance. <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not	3.66%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			bioaccumulate. Mobile in Soil: No impact if small amount is released to the soil. OCNS Rated E - 24330, Exp 11/03/2021		
Calcium Carbonate Various Grades – TrueCarb's, Limestone t / Circal's / Unical C300C, Omyacarb's	Newpark	Bridging & Weighting Agent	CONSTITUENT 1 (>96%) <u>Toxicology Data:</u> Oral Toxicity (LD50) – > 5000 mg/kg (rat) CONSTITUENT 2 (<1%) <u>Toxicology Data:</u> LCLo (inhalation) = 300 ug/m ³ /10 years (human) TCLo (inhalation) = 16 000 000 particles/ft ³ /8 hours/17.9 years (human-fibrosis) <u>Ecotoxicity Data:</u> Calcium carbonate occurs naturally in a wide variety of substances including limestone, marble and egg shells. It is not anticipated to cause adverse environmental effects. <u>Biodegradation/Bioaccumulation:</u> This product does not bioaccumulate.	2.93%	Y
Salt (Sodium Chloride all grades)	Newpark	Weighting Agent	<u>Constituents:</u> SODIUM CHLORIDE INORGANIC SALT(S) WATER <u>Toxicity:</u> Acute toxicity: LC50 (Inhalation): > 42000 mg/m ³ /1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Skin): > 10000 mg/kg (rabbit) <u>Ecotoxicity:</u> LC50 (water flea) is 2122 mg/L/48 hours;	19.80%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			LC50 (fathead minnow) is 6.57 g/L/96 hours. This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.		
NewZan D/Xanthan gum	Newpark	Viscosifier	<u>Constituents:</u> XANTHAM GUM WATER <u>Toxicity:</u> Acute toxicity: LD50 (oral) > 1000 mg/kg (mouse) LD50 (oral) > 45,000 mg/kg (rat) LD50 (oral) > 20,000 mg/kg (dog) LD50 (intraperitoneal): > 50 mg/kg (mouse) LD50 (intravenous): 100-250 mg/kg (mouse) <u>Biodegradation/Bioaccumulation:</u> This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. Not expected to bioaccumulate. OCNS Rated E - 26280, Exp 22/02/2021	0.43%	Y
NewPac LV / NewPac PLV / Drispac SL	Newpark	Fluid Loss	<u>Constituents:</u> SODIUM CARBOXYMETHYL CELLULOSE SODIUM CHLORIDE WATER SODIUM GLYCOLATE <u>Toxicity:</u> Acute toxicity data available for ingredients: SODIUM CARBOXYMETHYL CELLULOSE (9004-32-4)	0.52%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			LD50 (Ingestion): 16000 mg/kg (guinea pig) LD50 (Skin): > 2000 mg/kg (rabbit) TDLo (Ingestion): 140 mg/kg (rat) SODIUM CHLORIDE (7647-14-5) LC50 (Inhalation): > 42000 mg/m3/1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Intraperitoneal): 2602 mg/kg (mouse) LD50 (Intravenous): 645 mg/kg (mouse) LD50 (Skin): > 10000 mg/kg (rabbit) LD50 (Subcutaneous): 3000 mg/kg (mouse) LDLo (Ingestion): 8000 mg/kg (rabbit) LDLo (Intravenous): 300 mg/kg (guinea pig) LDLo (Subcutaneous): 2160 mg/kg (guinea pig) TDLo (Ingestion): 12357 mg/kg (human) SODIUM GLYCOLATE (2836-32-0) LD50 (Ingestion): 6700 mg/kg (mouse) LDLo (Ingestion): 500 mg/kg (cat) <u>Ecotoxicity:</u> LC50 (Fresh Water Trout) > 21,000 ppm/96hrs. LC50 (Salt Water StickleBack) > 56,000 ppm/96hrs. <u>Biodegradation/Bioaccumulation:</u> This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. Not expected to bioaccumulate. NewPac LV - OCNS Rated E - 28129, Exp 18/05/2021		
DynaFiber AP Fine & DynaFiber AP Med / NDFT 376 & NDFT 377	Newpark	Prevent lost circulation	<u>Constituents:</u> ORGANIC FIBRE(S) Not classified as hazardous according to Safe Work Australia criteria. <u>Toxicity:</u>	0.05%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. Oral Toxicity (LD50) > 5000 mg/kg (rat), Dermal Toxicity (LD50) > 2000 mg/kg (rabbit) <u>Biodegradation/Bioaccumulation:</u> No information provided.		
Ancor 1	Newpark	Corrosion Inhibitor	CONSTITUENT 1 (68-72%) <u>Toxicology Data:</u> Oral Toxicity (LD50) 6400 mg/kg (rat) Dermal Toxicity (LD50) > 2000 mg/kg (rabbit) LD50 (Ingestion): 2200 mg/kg (rabbit) LD50 (Intraperitoneal): 1450 mg/kg (mouse) LD50 (Skin): > 20 mL/kg (rabbit) TDLo (Ingestion): 16 g/kg/64 weeks (mouse - cancer) <u>Ecotoxicity Data:</u> LC50 (shrimp): > 100 ppm. <u>Biodegradation/bioaccumulation:</u> Not expected to bioaccumulate. CONSTITUENT 2 (28-32%) Non-hazardous ingredient.	0.04%	Y
AvaPolymer 5050	Newpark	Encapsulating Agent - provides shale inhibition	<u>Constituents:</u> Not applicable – Non-hazardous ingredients <u>Hazard Identification:</u> Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).	0.15%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Constituent 1 – (60%) ATEmix (oral) 27,000.00 mg/kg ATEmix (dermal) 2,002.00 mg/kg Constituent 2 - (40%) Oral Toxicity (LD50) - 16000 mg/kg (guinea pig) Dermal Toxicity (LD50) - > 2000 mg/kg (rabbit) TDLo (oral) 140 mg/kg (rat) <u>Ecotoxicity:</u> The environmental impact of this product has not been fully investigated. 100% of the mixture consists of component(s) of unknown hazards on the aquatic environment. This product has an CEFAS OCNS Gold rating. Registration number 27397 <u>Biodegradation/Bioaccumulation:</u> No information available.		
Caustic Soda	Newpark	pH control- prevents bacteria & corrosion.	<u>Constituents:</u> SODIUM HYDROXIDE <u>Toxicity:</u> Toxicity Data available for the ingredients: SODIUM HYDROXIDE (1310-73-2): LD50 (Intraperitoneal): 40 mg/kg (mouse) LDLo (Ingestion): 1.57 mg/kg (human)	0.10%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			SILICA, AMORPHOUS (7631-86-9): LD50 (ingestion): 3160 mg/kg (rat) <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate. WATER: If released to waterways, alkaline products may change the pH of the waterway. Fish will die if the pH reaches 10-11 (goldfish 10.9, bluegill 10.5). SOIL: May leach to groundwater with toxic effects on aquatic life as above. ATMOSPHERE: Not expected to reside in the atmosphere. Drops or particles released to atmosphere should be removed by gravity and/or be rained out. OCNS category and registration number E - 24316		
Sodium Sulphite	Newpark	Oxygen Scavenger	<u>Constituents:</u> SODIUM SULPHITE SODIUM SULPHATE SODIUM CARBONATE WATER <u>Toxicity:</u> Acute toxicity: LD50 (Ingestion): 820 mg/kg (mouse) LD50 (Intraperitoneal): 950 mg/kg (mouse) LD50 (Intravenous): 175 mg/kg (mouse) LDLo (Ingestion): 2825 mg/kg (rabbit) LDLo (Intravenous): 400 mg/kg (cat) LDLo (Subcutaneous): 600 mg/kg (rabbit) SODIUM CARBONATE (497-19-8) LC50 (inhalation) 800 mg/m³/2 hours (guinea pig) LD50 (ingestion) 4090 mg/kg (rat) LD50 (intraperitoneal) 117 mg/kg (mouse) LD50 (subcutaneous) 2210 mg/kg (mouse) SODIUM SULPHATE (7757-82-6)	0.16%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			LD50 (ingestion) 5989 mg/kg (mouse) LD50 (intravenous) 1220 mg/kg (rabbit) LDLo (intravenous) 1220 mg/kg (mouse) TDLo (ingestion) 14 g/kg (mouse - 8-12 days pregnant) TDLo (subcutaneous) 806 mg/kg/26 weeks intermittently (mouse) <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate. OCNS category and registration number E - 26232		
Soda Ash	Newpark	pH / Hardness control	<u>Constituents:</u> SODIUM CARBONATE <u>Toxicity:</u> LD50 (Ingestion): 4090 mg/kg (rat) LC50 (Inhalation): 800 mg/m3/2 hours (guinea pig) LD50 (Intraperitoneal): 117 mg/kg (mouse) LD50 (Subcutaneous): 2210 mg/kg (mouse) <u>Ecotoxicity:</u> Fishes, <i>Lepomis macrochirus</i> , LC50, 96 h, 300 mg/l Crustaceans, <i>Ceriodaphnia dubia</i> , EC50, 48 h, 200 - 227 mg/l <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate. WATER: If released to waterways, alkaline products may change the pH of the waterway. Fish will die if the pH reaches 10-11 (goldfish 10.9, bluegill 10.5). SOIL: May leach to groundwater with toxic effects on aquatic life as above. ATMOSPHERE: Not expected to reside in the atmosphere. Drops or particles released to atmosphere should be removed by gravity and/or be rained out. OCNS category and registration number E - 26180	0.11%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
Sodium Bicarbonate	Newpark	pH Buffer, Contamination Treatment	<u>Constituents:</u> SODIUM BICARBONATE <u>Toxicity:</u> Acute toxicity: LD50 (Ingestion): 3360 mg/kg (mouse) LC50 (inhalation): 4.74 mg/L (rat) <u>Ecotoxicity:</u> Fishes, <i>Lepomis macrochirus</i>, LC50, 96 h, 300 mg/l Crustaceans, <i>Ceriodaphnia dubia</i>, EC50, 48 h, 200 - 227 mg/l Ecotoxicity Data: LC50 (<i>Oncorhynchus mykiss</i>), 96 h, 7.700 mg/l LC50 (<i>Lepomis macrochirus</i>), 96 h, 7.100 mg/l EC50 (Crustaceans, <i>Daphnia magna</i>) 48 h, 4.100 mg/l LOEC (Crustaceans, <i>Daphnia magna</i>) 48 h, 3.100 mg/l <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Not expected to bioaccumulate. This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. OCNS category and registration number E - 26175	0.15%	Y
Idcide-20	Newpark	Biocide/Prevents bacterial contamination of the mud	<u>Constituents:</u> TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) WATER <u>Toxicity:</u> Toxicity data available for ingredient: TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE (55566-30-8) LD50 (ingestion) 248 mg/kg (rat) TDLo (ingestion) 650 mg/kg/13 weeks - intermittent (rat)	0.09%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			<u>Ecotoxicity:</u> 75% TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE (55566-30-8): LC50 (Rainbow Trout) = 119 mg/L/96 hr LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr EC50 (Daphnia Magna) = 19 mg/L/48 hr LC50 (Brown Shrimp) = 340 mg/L/96 hr LC50 (Mysid Shrimp) = 9.5 mg/L/96 hr LC50 (Sheepshead Minnow) = 94 mg/L/96 hr LC50 (Jevenile Plaice) = 86 mg/L/96 hr Waste Water management EC50 (Activated Sludge) = 24 mg/L/3 hr <u>Persistence and degradability:</u> This product is readily biodegradable. http://www.inchem.org/documents/ehc/ehc/ehc218.htm		
Citric Acid	Newpark	pH Buffer	<u>Constituents:</u> CITRIC ACID WATER <u>Toxicity:</u> Acute toxicity: LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Intraperitoneal): 290 mg/kg (rat) LD50 (Intravenous): 42 mg/kg (mouse) LDLo (Ingestion): 7000 mg/kg (rabbit) <u>Ecotoxicity:</u> LC50 (<i>Leuciscus idus melanotus</i>): 440 mg/L - 48 h LC 50 (<i>Daphnia magna</i>) (Water flea) - 1.535 mg/L - 24 h <u>Biodegradation/Bioaccumulation:</u> Readily Biodegradability. Does not bioaccumulate.	0.03%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			If citric acid is released to water, it is expected to biodegrade rapidly. May be toxic to fish at moderately high levels (120 ppm is fatal to daphnia; 894 ppm with pH 4 is fatal to goldfish) due to acidic nature. Fairly high biological oxygen demand (BOD) which may cause oxygen depletion in large spills. Citric acid occurs naturally in many plants. OCNS category and registration number E - 24317		
Magnesium Oxide	Newpark	pH Indicator	<u>Constituents:</u> MAGNESIUM OXIDE CALCIUM OXIDE SILICON DIOXIDE (SILICA, AMORPHOUS) Not classified as hazardous according to Safe Work Australia criteria. <u>Toxicity:</u> Acute toxicity: This product is expected to be of low toxicity. <u>Ecotoxicity:</u> No information provided. <u>Bioaccumulation/Biodegradation:</u> No information provided. OCNS category and registration number E - 28127	0.05%	Y
TEA	Newpark	Polymer stabiliser which effectively reduces the degradation of polymers at high temperatures	<u>Constituents:</u> TRIETHANOLAMINE DIETHANOLAMINE <u>Toxicity:</u> Acute toxicity: CONSTITUENT 1 (>60%) Oral Toxicity (LD50) 2200 mg/kg (rabbit), Dermal Toxicity (LD50) > 20 mL/kg (rabbit) CONSTITUENT 2 (10 – 30%) Oral Toxicity (LD50) 620 uL/kg (rat), Dermal Toxicity (LD50) > 20 mL/kg (rabbit)	0.12%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			CONSTITUENT 3 (<10%) Component is naturally occurring and not intrinsically hazardous. <u>Biodegradation/Bioaccumulation:</u> The substance is expected to be readily biodegradable according to the AS 4351 Part 2 test method. In soil and water, triethanolamine will biodegrade fairly rapidly following acclimation (half-life in the order of days to weeks). In soil, residual triethanolamine may leach to groundwater. LC50 (shrimp): > 100 ppm.		
Driscal D	Newpark	High temperature polymer	<u>Constituents:</u> Not applicable – Non-hazardous ingredients. Not a dangerous substance or mixture according to the Globally Harmonized System (GHS). <u>Toxicity:</u> LCLo (Inhalation): 300 ug/m3/10 years (human), LDLo (Intratracheal): 200 mg/kg (rat) LDLo (Intravenous): 20 mg/kg (dog), TCLo (Inhalation): 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) The product contains no substance classified as hazardous to health in concentrations which should be taken into account. <u>Bioaccumulation:</u> Accumulation in aquatic organisms is unlikely. <u>Biodegradability:</u> Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification.	0.03%	Y
CleanTrol	Newpark	Fluid Loss control	<u>Toxicology Data:</u> Low toxicity - low irritant. Under normal conditions of use, adverse health effects are not anticipated	0.49%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Ecotoxicity Data: This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. Biodegradation/bioaccumulation: Not expected to bioaccumulate. OCNS category and registration number E - 28966		
Gagetrol	Newpark	HT Fluid Loss	<u>Constituents:</u> CARBOXYMETHYL STARCH Not classified as hazardous according to Australian WHS Regulations. <u>Toxicity:</u> Low toxicity - low irritant. Under normal conditions of use, adverse health effects are not anticipated. <u>Ecotoxicity:</u> This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. <u>Biodegradation/Bioaccumulation:</u> Not expected to bioaccumulate. OCNS category and registration number Gold - 27759	0.03%	Y
JK-161 LV / JK-261 / JK-261HP (NewPHPA DLMW)	Newpark	Encapsulating Agent - provides shale inhibition	<u>Constituents:</u> ACRYLAMIDE, SODIUM ACRYLATE COPOLYMER WATER <u>Toxicity:</u> This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 rat (oral): > 2,000 mg/kg (OECD Guideline	0.07%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			401). Ecotoxicity: (10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis bahia = 48hr LC50 = 16.2 mg/L. Menidia beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia tonsa = 48 hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 Day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg] Biodegradation/Bioaccumulation: Not readily biodegradable (by OECD criteria). Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.		
Defoam-AP400	Newpark	Defoamer suitable for High Temperatures	<u>Constituents:</u> POLYETHYLENE GLYCOL OCTAN-2-OL Not classified as hazardous according to Safe Work Australia criteria. <u>Toxicity:</u> Low toxicity - low irritant. This product has the potential to irritate mucous membranes. Use safe work practices to avoid eye or skin contact and inhalation. Due to the low vapour pressure of this product, an inhalation hazard is not anticipated with normal use. Chronic exposure to some glycols may result in liver and kidney damage. POLYETHYLENE GLYCOL (25322-68-3) LD50 (ingestion) 33750 mg/kg (rat) <u>Ecotoxicity:</u> No information provided. <u>Biodegradation/Bioaccumulation:</u> No information provided. ATMOSPHERE: Vapour phase glycols are expected to degrade fairly rapidly by reaction with hydroxyl radicals (eg half-life 32 hours for propylene glycol). Removal	0.05%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			from air by rainfall is possible. WATER: Should degrade relatively rapidly via biodegradation. SOIL: If released to soil, relatively rapid biodegradation should also occur. Leaching to groundwater may occur.		
TOTAL				100%	
Ancor 1	Newpark	Corrosion Inhibitor	CONSTITUENT 1 (68-72%) <u>Toxicology Data:</u> Oral Toxicity (LD50) 6400 mg/kg (rat) Dermal Toxicity (LD50) > 2000 mg/kg (rabbit) LD50 (Ingestion): 2200 mg/kg (rabbit) LD50 (Intraperitoneal): 1450 mg/kg (mouse) LD50 (Skin): > 20 mL/kg (rabbit) TDLo (Ingestion): 16 g/kg/64 weeks (mouse - cancer) <u>Ecotoxicity Data:</u> LC50 (shrimp): > 100 ppm. <u>Biodegradation/bioaccumulation:</u> Not expected to bioaccumulate. CONSTITUENT 2 (28-32%) Non-hazardous ingredient.	0.04%	Y
AVADEFOAM NS	Newpark	Defoamer suitable for WBM	<u>Constituents:</u> Not applicable – Non-hazardous ingredients. Not a dangerous substance or mixture according to the Globally Harmonized System (GHS). <u>Toxicity:</u> CONSTITUENT 1 (95%) - Acute toxicity - Acute oral toxicity (LD50): 9380 mg/kg [Rat]. <u>Ecotoxicity:</u>	0.03%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Ecotoxicity in water (LC50): 100 mg/l 96 hours [Fish]. Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise. The product itself and its products of degradation are not toxic. <u>Toxicity:</u> CONSTITUENT 2 (5%) - Acute toxicity - Dermal LD50 Albino rabbit - > 2000 mg/kg, 14 days At this dose no death occurred. LD50 Oral Albino Sprague-Dawley rat > 10000 mg/kg, 14 days At this dose no death occurred. <u>Ecotoxicity:</u> Product Information: Product does not present an acute toxicity hazard based on known or supplied information. The following values are calculated based on chapter 3.1 of the GHS document ATEmix (oral) 10,010.00 mg/kg. The product is not classified as environmentally hazardous. Components Species Test Results Tall Oil Fatty Acids EC50 Bacteria (<i>Pseudomonas putida</i>) > 10000 mg/l, 16 hr Aquatic Algae EL50 > 1000 mg/l, 72 hr Growth rate; OECD 201 Green algae (<i>Selenastrum capricornutum</i>) Crustacea EL50 Water flea (<i>Daphnia magna</i>) > 1000 mg/l, 48 hr OECD 202 Fish LL50 Zebra danio (<i>Danio rerio</i>) > 10000 mg/l, 96 hr 95 % of the mixture consists of component(s) of unknown hazards to the aquatic environment <u>Biodegradation/Bioaccumulation:</u> - Percent degradation (Aerobic biodegradation) Tall Oil Fatty Acids 88 - 100 % CO2 Evolution Test Species: Activated sewage sludge Test Duration: 28 d		

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			OCNS category and registration number Gold - 27915		
New Perm NF / AvaPerm NF	Newpark	Prevent swelling clays by blocking the site for water hydration.	An equivalent product to AVAPERM NF has been registered on the CEFAS Offshore Chemical Notification Scheme with a 'Gold' rating & Registration # 24780 Constituents (mixture): HEXANEDINITRILE, HYDROGENATED, HIGH-BOILING FRACTION – (30 to 50%) HYDROCHLORIC ACID (<15%) NON-HAZARDOUS INGREDIENTS – (Remainder) <u>Toxicity:</u> Skin corrosion/irritation: Not corrosive (B.40 Bis - Reg. 440/2008/EC). Skin contact: Harmful and irritant. Eye contact: Irritant. Inhalation: Irritant. Ingestion: Harmful. Acute oral toxicity on rats (LD50): > 500 < 1000 mg/kg.* (based on components) Following information is confidential: <u>Ecotoxicity:</u> EC 50 (Skeletonema costatum) 54.4 mg/l LC50 (Acartia tonsa) 52.4 mg/l LC50 (Scophthalmus maximus juvenile) >51.0 mg/l <u>Biodegradation/Bioaccumulation:</u> Biodegradation Seawater test OECD 306 75 % Bioaccumulation OECD 117 LogPow ≤ 1.36	0.80%	Y
Barite / API Barite	Newpark	Weighting Agent	See Above	6.49%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
TrueScav HD	Newpark	Oxygen Scavenger Non-sulphur based,	<u>Constituents:</u> SODIUM ERYTHORBATE <u>Toxicity:</u> Constituent 1 – (>99%) The following values are calculated based on chapter 3.1 of the GHS document ATEmix (oral) 5,005.00 mg/kg Oral LD50 > 5 g/kg (Rat) <u>Ecotoxicity:</u> The environmental impact of this product has not been fully investigated. Unknown aquatic toxicity. 100 % of the mixture consists of component(s) of unknown hazards to the aquatic environment. <u>Biodegradation/Bioaccumulation:</u> Persistence/Degradability: Possibly hazardous short-term degradation products are not likely; However, long term degradation products may arise.	0.02%	Y
Thinpol	Newpark	Liquid dispersant	CONSTITUENT 1 (30-60%) <u>Toxicology Data:</u> This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated Oral Toxicity LD50 - 2500 mg/kg (rat) LD50 (intraperitoneal) 39 mg/kg (mouse) LD50 (intravenous) 70 mg/kg (mouse) CONSTITUENT 2 (<100%) <u>Toxicology Data:</u> Non-hazardous ingredient. <u>Ecotoxicity Data:</u> (10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L.	0.10%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000mg/Kg] <u>Biodegradation/bioaccumulation:</u> No information available.		
NDFT 376 & 377 (DynaFiber AP Fine & Dynafiber AP Med / Fine)	Newpark	Prevent lost circulation	<u>Toxicology Data:</u> Oral LD50 - > 5000 mg/kg (rat) Dermal LD50 - > 2000 mg/kg (rabbit) Inhalation LC50 - > 5800 mg/m ³ /4 hours (rat) <u>Ecotoxicity Data:</u> No information available. <u>Biodegradation/bioaccumulation:</u> No information available.	0.11%	Y
Calcium Chloride (94%) Powder	Newpark	Weighting Agent	<u>Constituents:</u> CALCIUM CHLORIDE ANHYDROUS SODIUM CHLORIDE WATER <u>Toxicity:</u> Acute toxicity: Based on available data, the classification criteria are not met. Toxicity Data available for the ingredients: CALCIUM CHLORIDE ANHYDROUS (10043-52-4) LD50 (Ingestion): 1000 mg/kg (rat) LD50 (Intraperitoneal): 210 mg/kg (mouse) LD50 (Intravenous): 42 mg/kg (mouse) LD50 (Subcutaneous): 823 mg/kg (mouse) LDLo (Ingestion): 1384 mg/kg (rabbit)	0.07%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			LDLo (Intravenous): 150 mg/kg (guinea pig) LDLo (Subcutaneous): 249 mg/kg (cat) TDLo (Intravenous): 20 mg/kg/1 hour (woman) SODIUM CHLORIDE (7647-14-5) LC50 (Inhalation): > 42000 mg/m ³ /1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Intraperitoneal): 2602 mg/kg (mouse) LD50 (Intravenous): 645 mg/kg (mouse) LD50 (Skin): > 10000 mg/kg (rabbit) LD50 (Subcutaneous): 3000 mg/kg (mouse) LDLo (Ingestion): 8000 mg/kg (rabbit) LDLo (Intravenous): 300 mg/kg (guinea pig) LDLo (Subcutaneous): 2160 mg/kg (guinea pig) TDLo (Ingestion): 12357 mg/kg (human) <u>Ecotoxicity:</u> No information provided. <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.		
MEG (AvaGlycol)	Newpark	Agent to free differentially stuck pipe	<u>Constituents:</u> ETHYLENE GLYCOL <u>Toxicity:</u> Toxicity data available for ingredient: ETHYLENE GLYCOL (107-21-1) LC50 (inhalation) 10 876 mg/kg (rat) LD50 (ingestion) 1650 mg/kg (cat) LD50 (skin) 9530 ug/kg (rabbit) LDLo (ingestion) 398 mg/kg (human) TCLo (inhalation) 10,000 mg/m ³ (human - cough) TDLo (ingestion) 5500 mg/kg (child - anaesthesia) Ethylene glycol will mainly exist in the vapour phase in the ambient atmosphere	0.33%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			where it will be degraded by reaction with hydroxyl radicals. Expected to be very highly mobile in soil. Not anticipated to volatilise from moist soil or water surfaces. <u>Ecotoxicity:</u> LC50 (Aquatic species): > 100mg/L/96hrs. Non-hazardous to aquatic organisms. <u>Biodegradation/Bioaccumulation:</u> Biodegradation in both soil and water is expected to be a major fate process for this compound. Not expected to bioconcentrate in aquatic organisms. Safe Work Australia Exposure Standards: http://hsis.ascc.gov.au/DocumentationES.aspx?ID=722 http://hsis.ascc.gov.au/DocumentationES.aspx?ID=271 CICADS Available: http://inchemsearch.ccohs.ca/inchem/jsp/search/search.jsp?inchemcasreg=1&Coll=inchemall&serverSpec=23vailab.ccohs.ca%3A9900&QueryText1=107-21-1&QueryText2=&Search.x=52&Search.y=10		
Strata-Vanguard	Newpark	Bridging Agent	<u>Constituents:</u> CELLULOSE DIATOMACEOUS EARTH, FLUX CALCINED FULLERS EARTH LIMESTONE (CALCIUM CARBONATE) CRISTOBALITE QUARTZ (CRYSTALLINE SILICA) MAGNESIUM OXIDE 1,3 BUTADIENE/STYRENE COPOLYMERS 2-PROPENENITRILE-1,3-BUTADIENE RUBBER NATURAL RUBBER POLYISOPRENE POLYETHYLENE	0.30%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			<u>Toxicity:</u> Toxicity data available for the ingredients: CRISTOBALITE (14464-46-1) TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis) QUARTZ (SILICA CRYSTALLINE) (14808-60-7) LCLo (inhalation) 300 ug/m³/10 years (human) TCLo (inhalation) 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) CELLULOSE (9004-34-6) LC50 (inhalation) > 5800 mg/m³/4 hours (rat) LD50 (ingestion) > 5000 mg/kg (rat) LD50 (intraperitoneal) > 31600 mg/kg (rat) LD50 (skin) > 2000 mg/kg (rabbit) POLYETHYLENE (9002-88-4) LDLo (ingestion) 3000 mg/kg (rat) MAGNESIUM OXIDE (1309-48-4) TCLo (inhalation) 400 mg/kg (human) <u>Ecotoxicity:</u> This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities <u>Biodegradation/Bioaccumulation:</u> Not expected to bioaccumulate. This product has low mobility in soil.		
Frac Attack	Newpark	Prevent lost circulation	<u>Constituents:</u> CELLULOSE DIATOMACEOUS EARTH FULLERS EARTH CALCIUM OXIDE CALCIUM HYDROXIDE CRISTOBALITE QUARTZ (CRYSTALLINE SILICA)	0.05%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			MAGNESIUM OXIDE 1,3 BUTADIENE/STYRENE COPOLYMERS 2-PROPENENITRILE-1,3-BUTADIENE RUBBER NATURAL RUBBER POLYISOPRENE <u>Toxicity:</u> Toxicity data available for the ingredients: CALCIUM HYDROXIDE (1305-62-0) LD50 (ingestion) 7300 mg/kg (mouse) CRISTOBALITE (14464-46-1) TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis) QUARTZ (SILICA CRYSTALLINE) (14808-60-7) LCLo (inhalation) 300 ug/m ³ /10 years (human) TCLo (inhalation) 16 000 000 particles/ft ³ /8 hours/17.9 years (human-fibrosis) CELLULOSE (9004-34-6) LC50 (inhalation) > 5800 mg/m ³ /4 hours (rat) LD50 (ingestion) > 5000 mg/kg (rat) LD50 (intraperitoneal) > 31600 mg/kg (rat) LD50 (skin) > 2000 mg/kg (rabbit) MAGNESIUM OXIDE (1309-48-4) TCLo (inhalation) 400 mg/kg (human) <u>Ecotoxicity:</u> The manufacturer reports that this product is harmful to aquatic life. Acute aquatic toxicity. CALCIUM HYDROXIDE (1305-62-0) EC50 Crustacea – 49.1 mg/L (<i>Daphnia magna</i> (water flea); 48-hour) ErC50 Algae – 184.6 mg/L (<i>Pseudokirchneriella subcapitata</i> (algae); 72-hour) <u>Biodegradation/Bioaccumulation:</u> No information was located.		

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
JK-161 LV / JK-261 / JK-261HP (NewPHPA DLMW)	Newpark	Encapsulating Agent - provides shale inhibition	<u>Constituents:</u> ACRYLAMIDE, SODIUM ACRYLATE COPOLYMER WATER <u>Toxicity:</u> This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 401). <u>Ecotoxicity:</u> (10000 ppm test concentration) (EPA-821-R-02-012) <i>Mysidopsis bahia</i> = 48hr LC50 = 16.2 mg/L. <i>Menidia beryllina</i> = 48hr LC50 = 34.2 mg/L. <i>Scophthalmus Maximus</i> = 96hr LC50 > 1000 mg/L. <i>Skeletonemia costatum</i> = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] <i>Acartia tonsa</i> = 48 hr EC50 = 393 mg/L [NOEC = 112 mg/L] <i>Corophium Volutator</i> = 10 Day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg] <u>Biodegradation/Bioaccumulation:</u> Not readily biodegradable (by OECD criteria). Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.	0.07%	Y
Driscal D	Newpark	High temperature fluid loss control agent	<u>Constituents:</u> Not applicable – Contains no hazardous ingredients (substance or mixture) according to GHS. <u>Toxicity:</u> LCLo (Inhalation): 300 ug/m3/10 years (human), LDLo (Intratracheal): 200 mg/kg (rat) LDLo (Intravenous): 20 mg/kg (dog), TCLo (Inhalation): 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) <u>Ecotoxicity:</u> This material is not expected to be harmful to aquatic organisms. <u>Biodegradation/Bioaccumulation:</u>	0.02%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification. Accumulation in aquatic organisms is unlikely.		
Defoam-AP400	Newpark	Defoamer suitable for High Temperatures	CONSTITUENT 1 – (45-60%) <u>Toxicology Data:</u> LD50 (ingestion) 33750 mg/kg (rat) CONSTITUENT 2 – (45-50%) <u>Toxicology Data:</u> This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. <u>Ecotoxicity Data:</u> Toxicity to Algae - No information available Toxicity to Fish – No information available Toxicity to Microorganisms - No information available Toxicity to Invertebrates – No information available <u>Biodegradation/bioaccumulation:</u> Component is considered not Bioaccumulative.	0.04%	Y
DSCO™ Defoam	Newpark	Defoamer	<u>Constituents:</u> POLYPROPYLENE GLYCOL <u>Toxicity:</u> This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. Not classified as hazardous according to Safe Work Australia criteria. Constituent 1 – (>60%) Oral Toxicity: An oral LD50 300 - 57000 mg/kg (range) Constituent 2 – (remainder) No Hazard <u>Biodegradation/Bioaccumulation:</u> This product is not expected to bioaccumulate.	0.04%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
SAPP	Newpark	Deflocculate or disperse bentonite muds or fluids with high levels of low gravity solids.	<u>Constituents:</u> DISODIUM PYROPHOSPHATE <u>Toxicity:</u> Acute toxicity: Low toxicity. Ingestion of large quantities may result in nausea, vomiting and gastrointestinal irritation. Ingestion of large quantities may also result in serious disturbances in calcium metabolism. LD50 (Ingestion): 2650 mg/kg (mouse) LD50 (Intraperitoneal): 1 g/kg (mouse) LD50 (Intravenous): 59 mg/kg (mouse) LD50 (Subcutaneous): 480 mg/kg (mouse) <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate. OCNS category (actual or equivalent chemical) and Registration number. E-2449	0.07%	Y
Sandseal Fine	Newpark	LCM	<u>Toxicology Data:</u> This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects <u>Ecotoxicity Data:</u> No information available. <u>Biodegradation/bioaccumulation:</u> No information available.	0.08%	Y
Calcium Carbonate Various Grades – TrueCarb's, Limestone t /	Newpark	Bridging & weighting agent	<u>Constituents:</u> LIMESTONE (CALCIUM CARBONATE) QUARTZ (CRYSTALLINE SILICA) No classified as hazardous according to Australian WHS Regulations.	0.16%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
Circal's / Unical C300C, Omyacarb's			<u>Toxicity:</u> This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 (Ingestion): 6450 mg/kg (rat). <u>Ecotoxicity:</u> Calcium carbonate occurs naturally in a wide variety of substances including limestone, marble and eggshells. It is not anticipated to cause adverse environmental effects. <u>Biodegradation/Bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Dissolved calcium carbonate dissociates into calcium and carbonate ions. Calcium ions will be assimilated by living organisms in the water and the carbonate will become part of the carbon cycle. This product does not bioaccumulate. Due to its limited solubility, calcium carbonate precipitates and deposits on the sediment.		
Flexfirm KA	Newpark	Inhibits dispersion of drilled shale cuttings	<u>Toxicology Data:</u> Oral Toxicity (LD50) 1600 mg/kg (rat) <u>Ecotoxicity Data:</u> The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (<i>Gambusia affinis</i>) of 2320 ppm; a 96 hour median tolerance of water fleas (<i>Daphnia magna</i>) of 247 ppm; a 96 hour median tolerance for snail eggs (<i>Lymnea</i>) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm <u>Biodegradation/bioaccumulation:</u> Neither silica nor potassium will appreciably bio-concentrate up the food chain.	0.13%	Y
SPA	Newpark	High temperature	Constituents: ACRYLATE – ACRYLAMIDE COPOLYMER	0.27%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
		fluid loss control agent	Toxicology Data: This product is expected to be of low toxicity. Based on available data, the classification criteria are not met. Ecotoxicity Data: (10000ppm test concentration) (EPA-821-R-02 012) Mysidopsis Bahia = 48 HR LC50 =16.2mg/L. Menidia Beryllina = 48hr LC50 = 34.2mg/L. Scophthalmus Maximus=96hr LC50 >1000mg/L. Skeletonemia Costatum = 72hr EC50 = 393mg/L [NOEC=118mg/L] Acartia Tonsa= 48hr EC50 = 393mg/L [NOEC=112mg/L] Corophium Volutator= 10day LC50 = 9338 mg/Kg [NOEC=1000mg/Kg] Bioaccumulation: No information available.		
Fracseal F / M / C	Newpark	LCM	<u>Toxicology Data:</u> Oral LD50 (rat) is > 5000 mg/kg. Dermal LD50 (rabbit) is > 2000 mg/kg. LC50 (rat) is 510 mg/m³/2 hours. Inhalation LC50 - > 5800 mg/m³/4 hours (rat) LD50 (intraperitoneal) > 31600 mg/kg (rat) <u>Ecotoxicity Data:</u> No information available. <u>Biodegradation/bioaccumulation:</u> No information available.	0.06%	Y
QUICKSEAL F / M / C	Newpark	LCM / Well Bore Strengthening	<u>Constituents:</u>	0.18%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			CELLULOSE <u>Toxicity:</u> This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated Acute Toxicity: Acute Oral Toxicity: LD50 (oral) > 5000 mg/kg (rats). Acute Dermal Toxicity: LD50 (dermal) > 2000 mg/kg (rats). Acute Inhalation Toxicity: LC50 (Inhalation) = 5800 mg/m3/4hrs (rat). <u>Ecotoxicity:</u> Low toxicity to aquatic organisms. <u>Biodegradation/Bioaccumulation:</u> This product is readily biodegradable. This product is not expected to bioaccumulate.		
AvaGreenLube	Newpark	Lubricant	<u>Constituents:</u> METHYL ESTERS OF FATTY ACIDS <u>Ecotoxicity:</u> LC50 (Fish) 48 h: > 10000 µg / L LC50 (Mollusc) 48 h: > 10000 µg /L LC50 (Amphibious) 48 h: > 7600 µg/L <u>Biodegradation/Bioaccumulation:</u> Persistence and degradability: 70% 28 days (method OECD 301 B). Low potential for bioaccumulation in aquatic organisms or terrestrial even after repeated exposure. It is not volatile and not expected to persist in the environment	0.53%	Y
Zinc Oxide	Newpark	H2S Scavenger	<u>Constituents:</u> ZINC OXIDE <u>Toxicity:</u>	0.13%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Acute toxicity: This product is expected to be of low toxicity. Based on available data, the classification criteria are not met. ZINC OXIDE (1314-13-2) LD50 (Oral) 7950 mg/kg (mouse) LC50 (Inhalation): 2500 mg/m³ (mouse) Additional ingredient toxicity values: LD50 (intraperitoneal) 240 mg/kg (rat) LDLo (oral) 500 mg/kg (human) TCLo (inhalation) 600 mg/m³ (human) <u>Ecotoxicity:</u> Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. <u>Biodegradation/Bioaccumulation:</u> This product is not readily biodegradable		
Victosal HT	Newpark	HT Fluid Loss Additive	<u>Toxicology Data:</u> Low toxicity - low irritant. Under normal conditions of use, adverse health effects are not anticipated <u>Ecotoxicity Data:</u> This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. <u>Biodegradation/bioaccumulation:</u> Not expected to bioaccumulate.	0.05%	Y
Victosal NS	Newpark	Modified Starch	<u>Toxicology Data:</u> This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. <u>Ecotoxicity Data:</u>	0.05%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. <u>Biodegradation/bioaccumulation:</u> No information available.		
Salt (Sodium Chloride all grades)	Newpark	Weighting Agent	<u>Toxicology Data:</u> LC50 (Inhalation): > 42000 mg/m3/1 hour (rat) LD50 (Ingestion): 3000 mg/kg (rat) LD50 (Skin): > 10000 mg/kg (rabbit) LD50 (intraperitoneal) 2602 mg/kg (mouse) LD50 (intravenous) 645 mg/kg (mouse) LD50 (subcutaneous) 3000 mg/kg (mouse) LDLo (intravenous) 300 mg/kg (guinea pig) LDLo (oral) 8000 mg/kg (rabbit) LDLo (subcutaneous) 2160 mg/kg (guinea pig) TDLo (oral) 12357 mg/kg (human) <u>Ecotoxicity Data:</u> LC50 (water flea) is 2122 mg/L/48 hours; LC50 (fathead minnow) is 6.57 g/L/96 hours. This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. <u>Biodegradation/bioaccumulation:</u> Biodegradability does not pertain to inorganic substances. Does not bioaccumulate.	4.00%	Y
Gagetrol	Newpark	HT Fluid Loss Additive	Low toxicity - low irritant. Under normal conditions of use, adverse health effects are not anticipated. <u>Ecotoxicity Data:</u>	0.05%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. <u>Biodegradation/bioaccumulation:</u> Not expected to bioaccumulate. OCNS category and registration number Gold - 29306		
CleanTrol **(Alternative for Gagetrol)	Newpark	HT Fluid Loss Additive	The product contains no substances which at their given concentration, are considered to be hazardous to health. <u>Ecotoxicity Data:</u> The environmental impact of this product has not been fully investigated. <u>Biodegradation/bioaccumulation:</u> No information available.	0.05% **	Y
NDFT 530 **(Alternative for CleanTrol)	Newpark	HT Fluid Loss Additive	The product contains no substances which at their given concentration, are considered to be hazardous to health. <u>Ecotoxicity Data:</u> The environmental impact of this product has not been fully investigated. <u>Biodegradation/bioaccumulation:</u> No information available.	0.05% **	Y
Magnesium Oxide	Newpark	Ph Buffer	CONSTITUENT 1 – (>94%) <u>Toxicology Data:</u> This product is expected to be of low toxicity. CONSTITUENT 2 – (<3.5%) <u>Toxicology Data:</u> This product is expected to be of low toxicity. CONSTITUENT 3 – (<2.5%) <u>Toxicology Data:</u> LD50 (oral) 3160 mg/kg (rat)	0.09%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			<u>Ecotoxicity Data:</u> This product is expected to be of low toxicity. <u>Biodegradation/bioaccumulation:</u> Not expected to bioaccumulate. OCNS category and registration number E – 28127		
TEA	Newpark	Polymer stabiliser which effectively reduces the degradation of polymers at high temperatures	CONSTITUENT 1 (>60%) <u>Toxicology Data:</u> Oral Toxicity (LD50) 2200 mg/kg (rabbit) Dermal Toxicity (LD50) > 20 mL/kg (rabbit) LD50 (intraperitoneal) 1450 mg/kg (mouse) TDLo (oral) 16 g/kg/64 weeks (mouse – cancer) CONSTITUENT 2 (10 – 30%) <u>Toxicology Data:</u> LD50 (intramuscular) 1500 mg/kg (rat) LD50 (intraperitoneal) 120 mg/kg (rat) LD50 (intravenous) 778 mg/kg (rat) LD50 (subcutaneous) 2200 mg/kg (rat) LDLo (oral) 3 g/kg (rat) CONSTITUENT 3 (<10%) Non-hazardous ingredient. <u>Ecotoxicity Data:</u> No information available. <u>Biodegradation/bioaccumulation:</u> No information available.	0.09%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
Geovis	Newpark	High temperature viscosifier	<u>Constituents:</u> D-GLUCURONO-6-DEOXY-L-MANNO-D-GLUCAN, ACETATE, CALCIUM MAGNESIUM POTASSIUM SODIUM SALT <u>Toxicity:</u> This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated. Oral Toxicity – (LD50) - > 5000 mg/kg (rat) <u>Ecotoxicity:</u> The notified polymer is not toxic to fish (rainbow trout), aquatic invertebrates (<i>daphnia magna</i>) and marine invertebrates (<i>acartia tonsa</i>) under test conditions. <u>Biodegradation/Bioaccumulation:</u> Considered readily biodegradable. No experimental results provided. However, based on the molecular weight, water solubility and 36now value the notified polymer is not expected to bioaccumulate.	0.05%	Y
Microflow	Newpark	Stimulation Additive	<u>Constituents:</u> SWEET ORANGE OIL ISOPROPYL ALCOHOL <u>Toxicity:</u> Acute toxicity: May be harmful if swallowed. Constituent 1 : ISOPROPANOL – (15-50%) Oral Toxicity: An oral LD50 in mice of 3600 mg/kg Constituent 2 : SWEET ORANGE OIL – (20-60%) No Hazard <u>Ecotoxicity:</u> Not expected to be dangerous to the aquatic environment. <u>Biodegradation/Bioaccumulation:</u> This product is readily biodegradable. This product is not expected to bioaccumulate.	0.03%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Relatively volatile and would therefore readily evaporate from dry soil and surfaces.		
INCORR	Newpark	Corrosion Inhibitor	CONSTITUENT 1 – (10-30%) <u>Toxicology Data:</u> Oral LD50 = 1500 mg/kg (Rat) <u>Ecotoxicity Data:</u> The environmental impact of this product has not been fully investigated. CONSTITUENT 2 – (1-10%) <u>Toxicology Data:</u> The environmental impact of this product has not been fully investigated. <u>Ecotoxicity Data:</u> The environmental impact of this product has not been fully investigated. CONSTITUENT 3 – (1-10%) <u>Toxicology Data:</u> Oral LD50 = 3310 mg/kg (Rat) Dermal LD50 = 1060 mg/kg (Rabbit) Inhalation LC50 = 1060 mg/kg (Rabbit) <u>Ecotoxicity Data:</u> Fish 79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static Toxicity to microorganisms EC50 = 8.8 mg/L 15 min, EC50 = 8.8 mg/L 25 min, EC50 = 8.8 mg/L 5 min Crustacea 65: 48 h Daphnia magna mg/L EC50 Static 47: 24 h Daphnia magna mg/L EC50	0.04%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			CONSTITUENT 4 – (Remainder) Non-hazardous ingredient. <u>Biodegradation/bioaccumulation:</u> Partition coefficient -0.31 OCNS category and registration number Gold – 27554		
Polydrill	Newpark	HT Fluid Loss Additive	<u>Toxicology Data:</u> Acute oral toxicity: LD50 (rat) > 5000 mg/kg (low toxicity). Under normal conditions of use, adverse health effects are not anticipated. <u>Ecotoxicity Data:</u> Oncorhynchus mykiss (Rainbow Trout) LC 50 (96 Hr) is 4,430 mg/L. Pseudomonas putida EC 10 (growth inhibition) is > 32,000 mg/L. <u>Bioaccumulation:</u> This product is not readily biodegradable	0.27%	Y
New100N®	Newpark	Lubricity and Shale Stabiliser	CONSTITUENT 1 as an ingredient (<50%) <u>Acute Toxicity:</u> LD50 oral, Mouse, 20,000 mg/kg <u>Chronic Toxicity:</u> Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. <u>Biodegradation/bioaccumulation:</u> No data available. CONSTITUENT 2 as an ingredient is a natural product (10-30%) <u>Acute Toxicity:</u> LD50 (intraperitoneal) 4420 mg/kg (rat) LD50 (intravenous) 4250 mg/kg (mouse) LD50 (subcutaneous) 91 mg/kg (mouse) TDLo (oral) 1428 mg/kg (human)	5.43%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Biodegradation/bioaccumulation: No data available. CONSTITUENT 3 as an ingredient (<40%) Non-hazardous ingredient.		
TOTAL *Contingent chemicals are highlighted grey.				120.33%	

C. Chemical List (Chemicals within fluid system identified in Table B)		
Chemicals Name	CAS number	Mass fraction (%)
Water	7732-18-5	69.63%
Bentonite	1302-78-9	1.83%
Potassium Chloride	7447-40-7	3.55%
Calcium Carbonate (Limestone)	471-34-1	2.82%
Sodium Chloride	7647-14-5	19.14%
Barium Sulphate	7727-43-7	0.24%
Sodium carboxymethyl Cellulose	9004-32-4	0.59%
Xanthan Gum	11138-66-2	0.39%
Polyvinylalcohol	9002-89-5	0.07%
Quartz (Silica Crystalline)	14808-60-7	0.10%
Sodium Hydroxide	1310-73-2	0.10%
Sodium Carbonate (Soda Ash)	497-19-8	0.14%
Sodium Sulphite	7757-83-7	0.16%

C. Chemical List (Chemicals within fluid system identified in Table B)		
Chemicals Name	CAS number	Mass fraction (%)
Sodium Sulphate	7757-82-6	0.004%
Sodium Bicarbonate	144-55-8	0.15%
Citric Acid, Anhydrous	77-92-9	0.03%
Sodium Glycolate	2836-32-0	0.004%
Modified Starch	9005-25-8	0.49%
Magnesium Oxide	1309-48-4	0.05%
Calcium Oxide	1305-78-8	0.002%
Silicon Dioxide	7631-86-9	0.001%
Carboxymethyl Starch	9057-06-1	0.20%
Acrylamide, Sodium Acrylate Copolymer	25987-30-8	0.06%
Polyethylene Glycol	25322-68-3	0.03%
Octan-2-ol	123-96-6	0.02%
2-acrylamido-2-methylpropane Sulfonic Acid	5165-97-9	0.03%
Tetrakis(hydroxymethyl)phosphonium Sulphate(2:1)	55566-30-8	0.10%
Diethanolamine	111-42-2	0.02%
Organic Fiber(s)	9004-34-6	0.046%
TOTAL		100%
Octan-2-ol	123-96-6	0.02%
Cellulose	9004-34-6	0.06%
Calcium Chloride	10043-52-4	0.06%
Sodium Chloride	7647-14-5	3.91%
Ethylene Glycol	107-21-1	0.33%

C. Chemical List (Chemicals within fluid system identified in Table B)		
Chemicals Name	CAS number	Mass fraction (%)
Quartz (Silica Crystalline)	14808-60-7	0.20%
Natural Rubber	9006-04-6	0.15%
Polyisoprene	9003-31-0	0.015%
Diatomaceous Earth	68855-54-9	0.045%
Fuller's earth	8031-18-3	0.03%
D-glucurono-6-deoxy-L-manno-D-glucan, Acetate, calcium magnesium potassium sodium Salt	595585-15-2	0.03%
Calcium Carbonate	1317-65-3	0.15%
Polyethylene	9002-88-4	0.01%
Cristobalite	14464-46-1	0.015%
Isopropyl Alcohol	67-63-0	0.01%
Calcium Oxide	1305-78-8	0.003%
Organic fibres	9004-34-6	0.11%
Magnesium oxide	1309-48-4	0.09%
Triethanolamine	102-71-6	0.05%
Hydrochloric acid	7647-01-0	0.12%
Zinc Oxide	1314-13-2	0.13%
Carboxymethyl starch	9057-06-1	0.11%
Acrylamide, Sodium Acrylate Copolymer	25987-30-8	0.06%
Barium Sulphate	7727-43-7	5.89%
Methyl esters of fatty acids	68990-52-3	0.53%
Sweet Orange Oil	68647-72-3	0.01%
Fatty Acids – Avade foam NS	68990-52-3	0.03%

C. Chemical List (Chemicals within fluid system identified in Table B)		
Chemicals Name	CAS number	Mass fraction (%)
Hexanedinitrile, Hydrogenated, High-Boiling Fraction	68411-90-5	0.32%
Silicon Dioxide	7631-86-9	0.002%
Polyethylene Glycol	25322-68-3	0.02%
Polypropylene Glycol	25322-69-4	0.04%
Potassium Silicate	1312-76-1	0.13%
Vegetable Materials	100209-45-8	0.08%
Disodium Pyrophosphate	7758-16-9 231-	0.07%
2-Propenoic Acid, Homopolymer	9003-01-4	0.05%
Diethanolamine	111-42-2	0.02%
Sodium Erythorbate	6381-77-7	0.02%
Modified Starch	9005-25-8	0.06%
Polyglycerol	25618-55-7	2.44%
Glycerol (Glycerine)	56-81-5	1.09%
4-Nonylphenol, Branched, Ethoxylated	127087-87-0	1.52%
Asphalt, Sulfonated, Sodium Salt	68201-32-1	2.11%

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name BARITE POWDER
Synonyms BARITE (API 13A SECTION 7) • NEWBAR • RHEOBAR

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE • WEIGHTING AGENT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
BARIUM SULPHATE	7727-43-7	231-784-4	>89%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<3%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Repeated exposure to crystalline silica may result in lung fibrosis (silicosis). Principal symptoms of silicosis are coughing and breathlessness. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (sulphur oxides) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Barium sulphate	SWA [AUS]	--	10	--	--
Barium sulphate (inhalable)	SWA [Proposed]	--	4	--	--
Barium sulphate (respirable)	SWA [Proposed]	--	1.35	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.1	--	--
Quartz (respirable dust)	SWA [Proposed]	--	0.05	--	--
Quartz (respirable dust)	WorkSafe VIC	--	0.05	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face Wear dust-proof goggles.
Hands Wear PVC or rubber gloves.
Body When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OFF-WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT RELEVANT
Melting point	> 1300°C
Evaporation rate	NOT RELEVANT
pH	8.2 (20% Slurry)
Vapour density	NOT RELEVANT
Specific gravity	4.20
Solubility (water)	INSOLUBLE
Vapour pressure	NOT RELEVANT
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT RELEVANT
Autoignition temperature	NOT RELEVANT
Decomposition temperature	NOT RELEVANT
Viscosity	NOT RELEVANT
Explosive properties	NOT EXPLOSIVE
Oxidising properties	NON OXIDISING
Odour threshold	NOT RELEVANT

9.2 Other information

Bulk density	~1.5 kg/L

10. STABILITY AND REACTIVITY

PRODUCT NAME **BARITE POWDER**

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve toxic gases (sulphur oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
BARIUM SULPHATE	> 5000 mg/kg (rat)	> 2000 mg/kg (rat)	--

Skin	Contact may result in irritation, redness, pain and rash.
Eye	Contact may result in irritation, lacrimation, pain, redness and blurring or dimness of vision.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, coughing, dizziness, drowsiness and headache.
STOT - repeated exposure	Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fish Toxicity: LC50 (Rainbow trout) > 7500 ppm/96hrs; LC50 (Fresh Water Trout) > 21,000 ppm/96hrs; LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs.

12.2 Persistence and degradability

Barium sulphate (major ingredient of barite (60-100%)) is insoluble in water and not biodegradable.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME BARITE POWDER**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name BENTONITE POWDER

Synonyms AVAGEL • BENTONIL HR • HISWELL • MAXIGEL • NATURALGEL • NEWGEL • RHEOBEN • RHEOBEN NT • SODIUM BENTONITE • SODIUM MONTMORILLONITE

1.2 Uses and uses advised against

Uses DRILLING FLUID

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Specific Target Organ Toxicity (Repeated Exposure): Category 2

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H373 May cause damage to organs through prolonged or repeated exposure.

Prevention statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

Response statements

P314 Get medical advice/attention if you feel unwell.

Storage statements

None allocated.

PRODUCT NAME BENTONITE POWDER

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
BENTONITE	1302-78-9	215-108-5	90 to 98%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	2 to 10%
SODA ASH	-	-	2 to 4%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Repeated exposure to crystalline silica may result in lung fibrosis (silicosis). Principal symptoms of silicosis are coughing and breathlessness. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure packaging are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust)	WorkSafe VIC	--	0.05	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BROWN POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	1100°C to 1200°C (Fusion Point)
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	2.7
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT

PRODUCT NAME **BENTONITE POWDER**

9.1 Information on basic physical and chemical properties

Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT EXPLOSIVE
Oxidising properties	NON OXIDISING
Odour threshold	NOT AVAILABLE

9.2 Other information

Bulk density	~ 0.9 kg/L

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity Data available for the ingredients:
QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
LCLo (inhalation) = 300 ug/m³/10 years (human)
TCLo (inhalation) = 16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis)
BENTONITE (1302-78-9):
LD50 (intravenous) = 35 mg/kg (rat)
LD50 (oral): > 2000mg/kg (rat)
LDLo (intravenous) = 10 mg/kg (dog)
Inhalation LC 50: > 5.27 mg/L, 4hr (rat)

Additional ingredient toxicity values:

BENTONITE (1302-78-9)
LD50 (intravenous) 35 mg/kg (rat)
LDLo (intravenous) 10 mg/kg (dog)

Skin

Not classified as a skin irritant. Contact may result in mild irritation and dermatitis.

Eye

Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation

Not classified as causing skin or respiratory sensitisation.

Mutagenicity

Insufficient data available to classify as a mutagen.

Carcinogenicity

This product contains crystalline silica which is classified as carcinogenic to humans (IARC Group 1). However, there is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis. Therefore, preventing the onset of silicosis will also reduce the cancer risk.

Reproductive

Insufficient data available to classify as a reproductive toxin.

STOT - single exposure

Not classified as causing organ damage from single exposure.

STOT - repeated exposure

Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.

Aspiration

Not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Bentonite (1302-78-9):
 EC50 Daphnia > 100 mg/l, 48 hours
 EC50 Freshwater algae > 100 mg/l, 72 hours
 LC50 Freshwater fish = 16000 mg/l, 96 hours
 LC50 Marine water fish = 2800 - 3200 mg/l, 24 hours
 EC50 Coon stripe shrimp (Pandalus danae) = 24.8 mg/l, 96 hours
 EC50 Dungeness or edible crab (Cancer magister) = 81.6 mg/l, 96 hours
 LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss) = 19000 mg/l, 96 hours

12.2 Persistence and degradability

Not relevant for inorganic substances.

12.3 Bioaccumulative potential

Will not bioaccumulate.

12.4 Mobility in soil

Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

12.5 Other adverse effects

The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse where possible. No special precautions are normally required when handling this product.
Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
 All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name POTASSIUM CHLORIDE
Synonyms KCL • MURIATE OF POTASH • POTASH • SYLVITE

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE • FERTILISER • INHIBITOR

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POTASSIUM CHLORIDE	7447-40-7	231-211-8	>97%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (potassium oxides, chlorides) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PRODUCT NAME POTASSIUM CHLORIDE

PPE

Eye / Face	At high dust levels, wear dust-proof goggles.
Hands	With prolonged use, wear PVC or rubber or cotton gloves.
Body	With prolonged use, wear coveralls.
Respiratory	At high dust levels, wear a Class P1 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1413°C
Melting point	773°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	2.0
Solubility (water)	340 g/L @ 20°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Potassium chloride is not in general strongly reactive. Violent reaction with BrF₃ and with a mixture of sulfuric acid potassium permanganate mixture (NTP, 1992). Reacts with concentrated sulfuric acid to generate fumes of hydrogen chloride. Incompatible with oxidising agents.

10.6 Hazardous decomposition products

May evolve toxic gases (potassium oxides, chlorides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	May be harmful if swallowed in large quantities. Additional toxicity data for potassium chloride: LD50 (Intraperitoneal): 620 mg/kg (mouse) LD50 (Intravenous): 117 mg/kg (mouse) LDLo (Ingestion): 20 mg/kg (man) LDLo (Intraperitoneal): 900 mg/kg (guinea pig) LDLo (Intravenous): 77 mg/kg (guinea pig)

PRODUCT NAME POTASSIUM CHLORIDE

LDLo (Subcutaneous): 2120 mg/kg (frog)
TDLo (Ingestion): 60 mg/kg/days (woman)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POTASSIUM CHLORIDE	2600 mg/kg (rat)	--	--

Skin	Not classified as a skin irritant. Contact may result in mild irritation and rash.
Eye	Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	Acute potassium poisoning via ingestion is rare as a large single dose usually induces vomiting, and potassium is rapidly excreted by the body, however this product does have the potential to cause cardiovascular disorders.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

In short-term acute toxicity tests with fish, daphnia and algae the following results were found (lowest test result values): Ictalurus punctulatus 48h-LC50 = 720 mg/l; Daphnia magna: 48h-LC50 = 177 mg/l; Nitzschia linearis: 120 h-EC50 = 1337 mg/l. A chronic reproductive test with the invertebrate Daphnia magna gave a LOEC of 101 mg/l. All the studies compiled on the acute and chronic aquatic toxicity were > 100 mg/L. Thus it is concluded that KCl is not hazardous to freshwater organisms. Taking into considerations the background concentrations of KCl in seawater (380 mg/l K⁺ and 19,000 mg/l Cl⁻), it is concluded that there is no reason for further investigations of KCl on marine species. The low concern for the environment is supported by the absence of a bioaccumulation potential for the substance.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No impact if small amount is released to the soil.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

PRODUCT NAME POTASSIUM CHLORIDE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME POTASSIUM CHLORIDE

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **CALCIUM CARBONATE**

Synonyms ABGRIT • CIRCAL • LIMESTONE • MARBLE • NEWCARB, AG LIMESTONE, UNICAL 20 • OMYACARB • STONEDUST • TRUECARB

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE • WEIGHTING AGENT

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website <http://www.newpark.com>

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
LIMESTONE (CALCIUM CARBONATE)	1317-65-3	215-279-6	>96%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

PRODUCT NAME **CALCIUM CARBONATE**

4.2 Most important symptoms and effects, both acute and delayed

May cause irritation to the eyes, skin and respiratory system.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

If spilt, collect and reuse where possible. If reuse is not possible, contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Calcium carbonate (Limestone, Marble, Whiting)	SWA [AUS]	--	10	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust) (Precautionary advice)	WorkSafe VIC	--	0.02	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	When using large quantities or where heavy contamination is likely, wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OFF-WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	840°C (Decomposes)
Melting point	825°C
Evaporation rate	NOT AVAILABLE
pH	9
Vapour density	NOT AVAILABLE
Relative density	2.7
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Calcium carbonate reacts with acids and acidic salts to generate gaseous carbon dioxide with effervescence (bubbling). The reaction with concentrated solutions of acids is rapid and exothermic. The effervescence can create extensive foaming. Ignites on contact with fluorine.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid), fluorine, aluminium (hot) and ammonium salts. Incompatible with oxidising agents (e.g. hypochlorites).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low toxicity. Based on available data, the classification criteria are not met. LD50 (Ingestion) = 6450 mg/kg (rat).

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
LIMESTONE (CALCIUM CARBONATE)	> 5000 mg/kg (rat)	--	--

Skin Not classified as a skin irritant. Contact may result in mild irritation, redness and rash.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. Chronic exposure to respirable silica may result in pulmonary fibrosis (silicosis). However, given the low levels present, over exposure is not anticipated.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Calcium carbonate occurs naturally in a wide variety of substances including limestone, marble and egg shells. It is not anticipated to cause adverse environmental effects.

12.2 Persistence and degradability

Dissolved calcium carbonate dissociates into calcium and carbonate ions. Calcium ions will be assimilated by living organisms in the water and the carbonate will become part of the carbon cycle.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

Due to its limited solubility, calcium carbonate precipitates and deposits on the sediment.

12.5 Other adverse effects

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary. EXPOSURE CONTROL: If utilised in a closed system the potential for over exposure is reduced. If not used in a closed system, local exhaust ventilation is recommended to control exposure. Provide eye wash and safety shower in close proximity to points of potential exposure. Where the potential for an inhalation risk exists, an approved respirator may be required. Do not eat, store, consume food, tobacco or drink in areas where product is used. PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME CALCIUM CARBONATE**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SALT

Synonyms BUTCHERS SALT • FLOSSY SALT • HALITE • NACL • SODIUM CHLORIDE

1.2 Uses and uses advised against

Uses CHLORIDE SOURCE • DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CHLORIDE	7647-14-5	231-598-3	>98%
INORGANIC SALT(S)	-	-	<0.8%
WATER	7732-18-5	231-791-2	<0.8%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

PRODUCT NAME SALT

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Under normal conditions of use, adverse health effects are not anticipated. This product is generally considered to be of low toxicity.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate fire protection systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TRANSLUCENT TO WHITE GRANULES OR POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1413°C
Melting point	801°C
Evaporation rate	NOT AVAILABLE
pH	7 (1 % Solution)
Vapour density	NOT AVAILABLE
Relative density	2.163
Solubility (water)	357 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed in large quantities. Repeated ingestion of excessive amounts of sodium chloride may cause disturbance of body electrolyte and fluid balance.
 LC50 (Inhalation): > 42000 mg/m³/1 hour (rat)
 LD50 (Ingestion): 3000 mg/kg (rat)
 LD50 (Skin): > 10000 mg/kg (rabbit)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m ³ /1 hour (rat)

Additional ingredient toxicity values:

SODIUM CHLORIDE (7647-14-5)

LD50 (intraperitoneal)	2602 mg/kg (mouse)
LD50 (intravenous)	645 mg/kg (mouse)
LD50 (subcutaneous)	3000 mg/kg (mouse)
LDLo (intravenous)	300 mg/kg (guinea pig)
LDLo (oral)	8000 mg/kg (rabbit)
LDLo (subcutaneous)	2160 mg/kg (guinea pig)
TDLo (oral)	12357 mg/kg (human)

Skin Contact may result in mild irritation and rash.
Eye Contact may cause discomfort, lacrimation and redness.
Sensitisation Not classified as causing skin or respiratory sensitisation.
Mutagenicity No evidence of mutagenic effects.
Carcinogenicity No evidence of carcinogenic effects.
Reproductive No relevant or reliable studies were identified.
STOT - single exposure Not classified as causing organ damage from single exposure.
STOT - repeated exposure Not classified as causing organ damage from repeated exposure.
Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: LC50 (water flea) is 2122 mg/L/48 hours; LC50 (fathead minnow) is 6.57 g/L/96 hours.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name NEWZAN D
Synonyms NEWZAN D • XANTHAN GUM (BIOPOLYMER) • XANTHAN GUM (P)

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE • VISCOSITY MODIFIER

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (NEW ZEALAND) LTD
Address PO BOX 6092, Moturoa, New Plymouth, TARANAKI, 4310, NEW ZEALAND
Telephone 0204 0234 734
Fax +61 8941 08299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 0800 243 622 (New Zealand); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NON HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
XANTHAN GUM	11138-66-2	234-394-2	>90%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact the National Poisons Centre on 0800 764 766 (0800 POISON) or +643 479 7248 or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Wear a Class P1 (Particulate) respirator. Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	LIGHT BEIGE POWDER
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	1.5
Solubility (water)	MISCIBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

PRODUCT NAME NEWZAN D

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Skin	Not classified as a skin irritant. Contact may result in mild irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA

	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Approval code	NON HAZARDOUS
Group standard	NON HAZARDOUS
Inventory listings	NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CCID	Chemical Classification and Information Database (HSNO)
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	EPA	Environmental Protection Authority [New Zealand]
	GHS	Globally Harmonized System
	HSNO	Hazardous Substances and New Organisms
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name NEWPAC LV/RD

Synonyms NEWPAC RD • POLICELL RG • RHEOPAC LV • RHEOPAC R • RHEOPAC R/LV/UL/RD/LVD • RHEOPAC UL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CARBOXYMETHYL CELLULOSE	9004-32-4	618-378-6	>88%
SODIUM CHLORIDE	7647-14-5	231-598-3	<1.8%
WATER	7732-18-5	231-791-2	<10%
SODIUM GLYCOLATE	2836-32-0	212-730-9	<0.7%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If

PRODUCT NAME NEWPAC LV/RD

swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE OR YELLOWISH POWDER/GRANULES
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.0 to 8.5 (1 % solution)
Vapour density	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Toxicity Data available on the ingredients:
SODIUM CARBOXYMETHYL CELLULOSE (9004-32-4)
 LD50 (Ingestion): 16000 mg/kg (guinea pig)
 LD50 (Skin): > 2000 mg/kg (rabbit)
 TDLo (Ingestion): 140 mg/kg (rat)
SODIUM CHLORIDE (7647-14-5)
 LC50 (Inhalation): > 42000 mg/m³/1 hour (rat)
 LD50 (Ingestion): 3000 mg/kg (rat)
 LD50 (Intraperitoneal): 2602 mg/kg (mouse)
 LD50 (Intravenous): 645 mg/kg (mouse)
 LD50 (Skin): > 10000 mg/kg (rabbit)
 LD50 (Subcutaneous): 3000 mg/kg (mouse)
 LDLo (Ingestion): 8000 mg/kg (rabbit)
 LDLo (Intravenous): 300 mg/kg (guinea pig)
 LDLo (Subcutaneous): 2160 mg/kg (guinea pig)
 TDLo (Ingestion): 12357 mg/kg (human)
SODIUM GLYCOLATE (2836-32-0)
 LD50 (Ingestion): 6700 mg/kg (mouse)
 LDLo (Ingestion): 500 mg/kg (cat)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CARBOXYMETHYL CELLULOSE	16000 mg/kg (guinea pig)	> 2000 mg/kg (rabbit)	--
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m ³ /1 hour (rat)
SODIUM GLYCOLATE	6700 mg/kg (mouse)	--	--

Additional ingredient toxicity values:

SODIUM CARBOXYMETHYL CELLULOSE (9004-32-4)
 TDLo (oral) 140 mg/kg (rat)

SODIUM CHLORIDE (7647-14-5)
 LD50 (intraperitoneal) 2602 mg/kg (mouse)
 LD50 (intravenous) 645 mg/kg (mouse)
 LD50 (subcutaneous) 3000 mg/kg (mouse)
 LDLo (intravenous) 300 mg/kg (guinea pig)
 LDLo (oral) 8000 mg/kg (rabbit)
 LDLo (subcutaneous) 2160 mg/kg (guinea pig)
 TDLo (oral) 12357 mg/kg (human)

SODIUM GLYCOLATE (2836-32-0)
 LDLo (oral) 500 mg/kg (cat)

Skin Not classified as a skin irritant. Contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Fresh Water Trout) > 21,000 ppm/96hrs.

LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name DYNAFIBER (TM) AP (F, M, C)
Synonyms DYNAFIBER • NDFT 376 • NDFT 377

1.2 Uses and uses advised against

Uses LOST CIRCULATION MATERIAL

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ORGANIC FIBRE(S)	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Relative density	0.9 to 1.2
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ORGANIC FIBRE(S)	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m ³ /4 hours (rat)

Skin Not classified as a skin irritant. Skin irritation is not anticipated under normal conditions of use.

Eye Not classified as an eye irritant. Eye irritation is not anticipated under normal conditions of use.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation). COMBUSTIBLE - EXPLOSIVE CARBONACEOUS DUST: Carbonaceous/organic dusts have the potential, with dispersion, to present an explosion hazard if an ignition source exists. All equipment used to handle, transfer or store this product MUST BE cleaned thoroughly prior to cutting, welding, drilling or exposure to any other form of heat or ignition sources. If bulk stored, containers should be ventilated on a routine basis to avoid vapour accumulation (where applicable, eg for flocculants). PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME DYNAFIBER (TM) AP (F, M, C)**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ANCOR 1**
Synonyms CORROSION INHIBITOR

1.2 Uses and uses advised against

Uses BRINE • CORROSION INHIBITOR • DRILLING FLUID ADDITIVE • OIL AND GAS INDUSTRY

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H319 Causes serious eye irritation.

Prevention statements

P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.

PRODUCT NAME ANCOR 1**Storage statements**

None allocated.

Disposal statements

None allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
TRIETHANOLAMINE	102-71-6	203-049-8	68 to 72%
NON HAZARDOUS INGREDIENTS	Not Available	Not Available	28 to 32%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Over exposure may result in irritation to the eyes, nose and respiratory system. May cause allergic contact dermatitis.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Store as a Class C2 Combustible Liquid (AS1940).

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Triethanolamine	SWA [AUS]	--	5	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. If spraying, wear a Type A-Class P1 (Organic gases/vapours and Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS LIQUID
Odour	SLIGHT ODOUR
Flammability	CLASS C2 COMBUSTIBLE
Flash point	> 100°C
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Vapour density	NOT AVAILABLE
Specific gravity	1.1
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Hazardous polymerisation is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), nitrites, heat and ignition sources.

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed, in contact with skin, and/or if inhaled.
Toxicity Data available for the ingredient:
TRIETHANOLAMINE (102-71-6):
LD50 (Ingestion): 2200 mg/kg (rabbit)
LD50 (Intraperitoneal): 1450 mg/kg (mouse)
LD50 (Skin): > 20 mL/kg (rabbit)
TDLo (Ingestion): 16 g/kg/64 weeks (mouse - cancer)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
TRIETHANOLAMINE	6400 mg/kg (rat)	> 2000 mg/kg (rabbit)	--

Additional ingredient toxicity values:

TRIETHANOLAMINE (102-71-6)
LD50 (intraperitoneal) 1450 mg/kg (mouse)
TDLo (oral) 16 g/kg/64 weeks (mouse - cancer)

Skin Contact may result in irritation, redness and rash.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Triethanolamine has been reported to cause allergic contact dermatitis. It is not known to cause respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Triethanolamine is not classifiable as to its carcinogenicity to humans (IARC Group 3). Considering the animal studies conducted, there is no evidence of carcinogenicity through the oral route and equivocal

PRODUCT NAME ANCOR 1

evidence of carcinogenicity through the dermal route. The available data do not warrant hazard classification.

Reproductive

Not classified as a reproductive toxin.

STOT - single exposure

Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.

STOT - repeated exposure

Not classified as causing organ damage from repeated exposure.

Aspiration

Not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (shrimp): > 100 ppm.

12.2 Persistence and degradability

In soil and water, triethanolamine will biodegrade fairly rapidly following acclimation (half-life in the order of days to weeks).

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

In soil, residual triethanolamine may leach to groundwater.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods**Waste disposal**

Reduce with sodium thiosulphate/ bisulphite (not strong reducing agent), acidify with 3M sulphuric acid. Scoop into a container of water and neutralise with soda ash. Absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation

Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**Poison schedule**

Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications

Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information **RESPIRATORS:** In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report status This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

PRODUCT NAME ANCOR 1

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

AVAPOLYMER 5050

Issue Date 12-Apr-2017

Revision date 09-Aug-2022

Version 1.1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

1

Product identifier

Product Name AVAPOLYMER 5050

Product Code NDF00252

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use shale stabilizer

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification

May be harmful in contact with skin

General Hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Not applicable

Mixture

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	-	100

Section 4: FIRST AID MEASURES**Description of first aid measures**

Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media	Water spray (fog). Carbon dioxide (CO2).

Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products	Carbon oxides.

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials None known

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

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

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations

Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid		
Appearance	Powder	Odor	Slight.
Color	No information available	Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8.0 - 11.0	20 g/L solution
Melting point / freezing point		No data available
Boiling point / boiling range		No data available
Flash point		Not applicable
Evaporation rate		No data available
Flammability (solid, gas)		No data available
Flammability Limit in Air		No data available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density		No data available
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No data available
Hyphen		No data available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity	Stable.

Chemical stability

Stability	Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

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

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

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

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

Symptoms No information available.

Numerical measures of toxicity - Product Information

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

ATEmix (oral) 27,000.00 mg/kg

ATEmix (dermal) 2,002.00 mg/kg

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity

40 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

40 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

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

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

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

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Unknown aquatic toxicity	100 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability	No information available.

Bioaccumulative potential

Bioaccumulation	No information available.

Mobility

Mobility in soil	No information available.

Mobility	No information available.

Other adverse effects

Other adverse effects	No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Section 14: TRANSPORT INFORMATION

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

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

No information available

Section 15: REGULATORY INFORMATION**Regulatory information****National regulations****Australia**

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**Brunei Poison List** Not applicable.**Section 16: ANY OTHER RELEVANT INFORMATION****Issue Date** 12-Apr-2017**Revision date** 09-Aug-2022**Revision Note**

No information available.

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

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name CAUSTIC SODA
Synonyms SODIUM HYDROXIDE SOLID

1.2 Uses and uses advised against

Uses MANUFACTURE OF CHEMICALS • REAGENT • SCRUBBING AGENT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Skin Corrosion/Irritation: Category 1A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H314 Causes severe skin burns and eye damage.

Prevention statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

PRODUCT NAME CAUSTIC SODA

Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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 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.
P321	Specific treatment is advised - see first aid instructions.
P363	Wash contaminated clothing before reuse.

Storage statements

P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM HYDROXIDE	1310-73-2	215-185-5	>99%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator where an inhalation risk exists. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage.

4.3 Immediate medical attention and special treatment needed

CORROSIVE POISONING TREATMENT: Immediate treatment preferably in a hospital is mandatory. In treating corrosive poisoning, DO NOT INDUCE VOMITING; DO NOT ATTEMPT GASTRIC LAVAGE; and DO NOT ATTEMPT TO NEUTRALISE THE CORROSIVE SUBSTANCE. Vomiting will increase the severity of damage to the oesophagus as the corrosive substance will again come in contact with it. Attempting gastric lavage may result in perforating either the oesophagus or stomach. Immediately dilute the corrosive substance by having the patient drink milk or water. If the trachea has been damaged tracheostomy may be required. For oesophageal burns begin broad-spectrum antibiotics and corticosteroid therapy. Intravenous fluids will be required if oesophageal or gastric damage prevents ingestion of liquids. Long-range therapy will be directed toward preventing or treating oesophageal scars and strictures.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire. Use carbon dioxide or suitable dry chemical extinguisher. Do NOT use water.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve flammable hydrogen gas in contact with some metals. Direct contact with water can produce a violent exothermic reaction.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

2X
2 Fine Water Spray.
X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Allow only trained personnel wearing appropriate protective equipment to be involved in spill response. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Mechanically collect as much of the spill as possible. Absorb with sand, earth or clay. Transfer to suitable, labelled, corrosion-resistant containers and dispose of promptly as hazardous waste. Spill on areas other than pavement, dirt or sand may be handled by removing the affected soils and placing into approved containers.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Do not smoke, eat or drink when handling product. Product can react violently with water and acids. Caustic solution generates heat when further diluted with water. Concentrations greater than 40%, the heat generated can raise temperatures above the boiling point resulting in sporadic, violent eruptions or spattering. Emergency showers and eye-washes must be available. When used in its various applications, the product must be prevented from coming into uncontrolled direct contact with other products such as acids and metals. Never neutralise the solid product.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Store away from aluminium, tin, zinc and alloys (bronzes), chrome and lead. Protect from damp and kept apart from acids, halogenated hydrocarbons, nitroparaffins, etc. The floor must be waterproof and anti-slip. A water supply or source must be provided in the place of storage. Emergency showers and eye-washes must be available. Special conditions: Prevent the product from becoming damp or erated. Hygroscopic product. Becomes carbonated in contact with the air or moisture.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Sodium hydroxide (peak limitation)	SWA [AUS]	--	2 (Peak)	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear a faceshield and dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls and rubber boots and a PVC apron.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear an Air-line respirator or a Full-face Class P3 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE DELIQUESCENT PEARLS
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1390°C
Melting point	318°C
Evaporation rate	NOT AVAILABLE
pH	13.5 (1 % solution)
Vapour density	NOT AVAILABLE
Specific gravity	2.12
Solubility (water)	1110 kg/m ³ @ 20°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Highly exothermal reaction with strong acids. Reacts dangerously with acetic acid, allyl chloride, chlorine trifluoride, chloroform, methylic alcohol, chloronitrotoluene, chlorosulphonic acid, glyoxal, cyanohydrin, hydrochloric acid, hydrofluoric acid, hydroquinone, nitric acid, sulphuric acid and oleum, nitropropane, phosphorous, propiolactone, phosphorous pentoxide, tetrachlorobenzene, tetrahydrofuran, etc. Caustic soda forms salts with nitromethane and nitroparaffins that explode on impact. Heat is generated when mixed with water. Spattering and boiling can occur. Caustic soda solution reacts readily with various reducing sugars (ie: fructose, galactose, maltose, dry whey solids) to produce carbon monoxide. Caustic soda forms salts with nitromethane and nitroparaffins that explode on impact. Reacts with aluminium, tin, zinc and their alloys, copper, lead, etc. giving off hydrogen.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), metals, heat and ignition sources.

10.6 Hazardous decomposition products

Reacts with aluminium, tin, zinc and their alloys, copper, lead, etc. giving off hydrogen. When the product decomposes, toxic sodium oxide gases are evolved.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Highly corrosive. This product has the potential to cause serious adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Over exposure may result in severe burns with corrosive tissue damage. Upon dilution, the potential for corrosive effects may be reduced. SODIUM HYDROXIDE (1310-73-2): LD50 (Intraperitoneal): 40 mg/kg (mouse) LDLo (Ingestion): 1.57 mg/kg (human) Additional ingredient toxicity values: SODIUM HYDROXIDE (1310-73-2) LD50 (intraperitoneal) 40 mg/kg (mouse) LDLo (oral) 500 mg/kg (rabbit)
Skin	Causes severe burns. Contact may result in irritation, redness, pain, rash, dermatitis and skin burns.
Eye	Causes severe burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible permanent eye damage.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen. Both the in vitro and the in vivo genetic toxicity tests indicated no evidence of mutagenic activity. Furthermore the substance is not expected to be systemically available in the body under normal handling and use conditions and for this reason additional testing is considered unnecessary (EU RAR, 2007).
Carcinogenicity	Not classified as a carcinogen. Insufficient data available to classify as a carcinogen. Systemic carcinogenicity is not expected to occur because the substance is not expected to be systemically available in the body under normal handling and use conditions.
Reproductive	Not classified as a reproductive toxin. Insufficient data available to classify as a reproductive toxin. The substance is not expected to be systemically available in the body under normal handling and use conditions and for this reason it can be stated that the substance will not reach the foetus nor reach male and female reproductive organs. The substance is not expected to be systemically available in the body under normal handling and use conditions and for this reason additional testing is considered unnecessary.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

EC50 Ceriodaphnia: 40 mg/L.

No other valid studies available. The hazard of NaOH for the environment is caused by the hydroxyl ion (pH effect). For this reason the effect of NaOH on the organisms depends on the buffer capacity of the aquatic or terrestrial ecosystem (see also 3.1.2). Also the variation in acute toxicity for aquatic organisms can be explained for a significant extent by the variation in buffer capacity of the test medium. LC50 values ranged between 33 and 189 mg/L.

12.2 Persistence and degradability

Readily biodegradable. NaOH is a strong alkaline substance that dissociates completely in water to Na⁺ and OH⁻. High water solubility and low vapour pressure indicate that NaOH will be found predominantly in aquatic environment. This implies that it will not adsorb on particulate matter or surfaces. Atmospheric emissions as aerosols are rapidly neutralized by carbon dioxide and the salts will be washed out by rain.

PRODUCT NAME CAUSTIC SODA

12.3 Bioaccumulative potential

Does not bioaccumulate. Considering its high water solubility, NaOH is not expected to bioconcentrate in organisms. In addition, sodium is a naturally-occurring element that is prevalent in the environment and to which organisms are exposed regularly, for which they have some capacity to regulate the concentration in the organism.

12.4 Mobility in soil

High water solubility and mobility

12.5 Other adverse effects

WATER: If released to waterways, alkaline products may change the pH of the waterway. Fish will die if the pH reaches 10-11 (goldfish 10.9, bluegill 10.5). SOIL: May leach to groundwater with toxic effects on aquatic life as above. ATMOSPHERE: Not expected to reside in the atmosphere. Drops or particles released to atmosphere should be removed by gravity and/or be rained out.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required). The product can be neutralised using highly diluted hydrochloric acid, which should be added very slowly by specialised personnel wearing proper protection. Never neutralise the solid product.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1823	1823	1823
14.2 Proper Shipping Name	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID
14.3 Transport hazard class	8	8	8
14.4 Packing Group	II	II	II

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code	2X
GTEPG	8A1
EmS	F-A, S-B

15. REGULATORY INFORMATION

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

Poison schedule	Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, frequency and duration of use, quantity used, effectiveness of control measures, protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SODIUM SULPHITE
Synonyms SODIUM SULFITE

1.2 Uses and uses advised against

Uses ANTIOXIDANT • FOOD PRESERVATIVE • LABORATORY REAGENT • PAPER INDUSTRY • PHOTOGRAPHIC DEVELOPER • REDUCING AGENT • WATER TREATMENT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Serious Eye Damage / Eye Irritation: Category 1
Contact with acids liberates toxic gas.

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

AUH031 Contact with acids liberates toxic gas.
H302 Harmful if swallowed.
H318 Causes serious eye damage.

Prevention statements

P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

PRODUCT NAME **SODIUM SULPHITE**

Response statements

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTRE or doctor/physician.
P330 Rinse mouth.

Storage statements

None allocated.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM SULPHITE	7757-83-7	231-821-4	>97%
SODIUM SULPHATE	7757-82-6	231-820-9	<2.5%
SODIUM CARBONATE	497-19-8	207-838-8	<0.1%
WATER	7732-18-5	231-791-2	<0.1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Urgent hospital treatment is likely to be needed. If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower are recommended.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve sulphur oxides and sodium oxides when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

PRODUCT NAME SODIUM SULPHITE

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Sodium Carbonate (total dust)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Full-face Class P3 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE CRYSTALLINE SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE

9.1 Information on basic physical and chemical properties

Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	9.0 to 10.5
Vapour density	NOT AVAILABLE
Relative density	2.6
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Contact with acids liberates toxic gas.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Avoid exposure to air and moisture. Sensitive to air and moisture.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid). Strong reducing agent.

10.6 Hazardous decomposition products

May evolve sulphur oxides and sodium oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM SULPHITE	820 mg/kg (mouse); 3560 mg/kg (rat)	> 2000 mg/kg (rat)	> 5500 mg/m ³ /4hrs (rat)
SODIUM SULPHATE	5989 mg/kg (mouse)	--	--
SODIUM CARBONATE	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/kg (rat) (AICIS)	> 2000 mg/m ³ (rat) (AICIS)

PRODUCT NAME SODIUM SULPHITE

Additional ingredient toxicity values:

SODIUM SULPHITE (7757-83-7)

LD50 (intraperitoneal)	950 mg/kg (mouse)
LD50 (intravenous)	175 mg/kg (mouse)
LDLo (intravenous)	400 mg/kg (cat)
LDLo (oral)	2825 mg/kg (rabbit)
LDLo (subcutaneous)	600 mg/kg (rabbit)

SODIUM SULPHATE (7757-82-6)

LD50 (intravenous)	1220 mg/kg (rabbit)
LDLo (intravenous)	1220 mg/kg (mouse)
TDLo (oral)	14 g/kg (mouse - 8-12 days pregnant)
TDLo (subcutaneous)	806 mg/kg/26 weeks intermittently (mouse)

SODIUM CARBONATE (497-19-8)

LD50 (intraperitoneal)	117 mg/kg (mouse)
LD50 (subcutaneous)	2210 mg/kg (mouse)

Skin	Contact may result in irritation, redness, rash and dermatitis.
Eye	Contact may result in irritation, lacrimation, pain, redness and possible serious eye damage.
Sensitisation	Some individuals are hypersensitive to sulphites and may experience adverse reactions following exposure. Individuals known to be hypersensitive or with existing respiratory problems (eg asthma) are advised to avoid exposure.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in mucous membrane irritation of the respiratory tract, with coughing.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Cover spill with soda ash or sodium bicarbonate. Mix and spray with water, may be effervescent. Wait until reaction is complete, scoop into a large beaker and cautiously add equal volume of sodium hypochlorite (reaction may be vigorous). Add more water, stir and allow to stand (~1hr). Dilute and neutralise. Absorb with sand/similar dispose of to an approved landfill site, or alternatively (for small amounts) flush to sewer with large excess of water.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

PRODUCT NAME SODIUM SULPHITE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary. WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary. PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME SODIUM SULPHITE**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SODA ASH
Synonyms SODA ASH DENSE • SODIUM CARBONATE

1.2 Uses and uses advised against

Uses DRILLING AID

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Serious Eye Damage / Eye Irritation: Category 1
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Prevention statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

PRODUCT NAME SODA ASH

Response statements

P304 + P340 IF INHALED: Remove 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.

Storage statements

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

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CARBONATE	497-19-8	207-838-8	>97%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes and skin.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Sodium Carbonate (total dust)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	854°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Vapour density	NOT AVAILABLE
Specific gravity	2.533
Solubility (water)	170 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CARBONATE	> 2000 mg/kg (rat) (NICNAS)	> 2000 mg/kg (rat) (NICNAS)	> 2000 mg/m ³ (rat) (NICNAS)

Additional ingredient toxicity values:

SODIUM CARBONATE (497-19-8)

LD50 (intraperitoneal) 117 mg/kg (mouse)

LD50 (subcutaneous) 2210 mg/kg (mouse)

Skin	Contact may result in irritation, redness, rash and dermatitis.
Eye	Contact may result in irritation, lacrimation, pain, redness and possible permanent damage.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure. Carbonate ions are neutralised under physiological conditions to form bicarbonate ions and/or carbon dioxide, which are major products of all human metabolic activities; therefore, systemic toxicity is not expected.

PRODUCT NAME SODA ASH

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fishes, *Lepomis macrochirus*, LC50, 96 h, 300 mg/l. Crustaceans, *Ceriodaphnia dubia*, EC50, 48 h, 200 - 227 mg/l.

12.2 Persistence and degradability

Not applicable for inorganic substances. The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

If sodium carbonate is emitted to soil it can escape to atmosphere as carbon dioxide, precipitate as a metal carbonate, form complexes or stay in solution.

12.5 Other adverse effects

WATER: If released to waterways, alkaline products may change the pH of the waterway. Fish will die if the pH reaches 10-11 (goldfish 10.9, bluegill 10.5). SOIL: May leach to groundwater with toxic effects on aquatic life as above. ATMOSPHERE: Not expected to reside in the atmosphere. Drops or particles released to atmosphere should be removed by gravity and/or be rained out.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, frequency and duration of use, quantity used, effectiveness of control measures, protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SODIUM BICARBONATE

Synonyms BAKING SODA • BICARBONATE OF SODA • CARBONIC ACID, MONOSODIUM SALT • MONOSODIUM CARBONATE • SODIUM ACID CARBONATE • SODIUM HYDROGEN CARBONATE

1.2 Uses and uses advised against

Uses PH CONTROL

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM BICARBONATE	144-55-8	205-633-8	>99%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

No adverse health effects expected if the product is handled in accordance with the SDS and the product label.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Sodium Bicarbonate (total dust)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PRODUCT NAME **SODIUM BICARBONATE**

PPE

Eye / Face	When using large quantities or where heavy contamination is likely, wear dust-proof goggles.
Hands	When using large quantities or where heavy contamination is likely, wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	854°C
Evaporation rate	NOT AVAILABLE
pH	8 (1% Solution)
Vapour density	NOT AVAILABLE
Specific gravity	2.533
Solubility (water)	170 g/L @ 25°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. Sodium bicarbonate can neutralise the gastric juices in the stomach. During neutralisation, carbon dioxide gas is evolved and may cause stretching of the stomach, and with very large doses possible damage or rupture.

LD50 (Ingestion): 3360 mg/kg (mouse)
LC50 (inhalation): 4.74 mg/L (rat)

PRODUCT NAME SODIUM BICARBONATE**Information available for the ingredients:**

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM BICARBONATE	> 4000 mg/kg (rat)	--	> 4.74 mg/L/4.5hrs (rat)

Skin Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Oncorhynchus mykiss) = 7.700 mg/l/96hrs.

LC50 (Lepomis macrochirus) = 7.100 mg/l/96hrs.

EC50 (Crustaceans, Daphnia magna) = 4.100 mg/l/48hrs

LOEC (Crustaceans, Daphnia magna) = 3.100 mg/l/48hrs.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

High mobility in water and soil/sediments.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information **PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

PRODUCT NAME SODIUM BICARBONATE

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name IDCIDE-20

Synonyms IDCIDE 20

1.2 Uses and uses advised against

Uses BIOCIDES • DRILLING FLUID ADDITIVE • WATER TREATMENT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website <http://www.newpark.com>

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4

Skin Corrosion/Irritation: Category 2

Skin Sensitisation: Category 1

Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H302

Harmful if swallowed.

H315

Causes skin irritation.

H317

May cause an allergic skin reaction.

H319

Causes serious eye irritation.

PRODUCT NAME IDCIDE-20**Prevention statements**

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment is advised - see first aid instructions.
P330	Rinse mouth.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage statements

None allocated.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	55566-30-8	259-709-0	18 to 25%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).
First aid facilities	Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. May evolve carbon oxides, sulphur oxides and phosphates when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls. In a laboratory situation, wear a laboratory coat.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS TO PALE YELLOW LIQUID
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 100°C
Melting point	< 0°C
Evaporation rate	AS FOR WATER
pH	3.0 to 3.5
Vapour density	NOT AVAILABLE
Relative density	1.08
Solubility (water)	SOLUBLE
Vapour pressure	18 mm Hg @ 20°C
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	> 60 % (Water)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1)	248 mg/kg (rat)	> 2000 mg/kg (rat)	5.5 mg/L/4hrs (rat)

Additional ingredient toxicity values:

TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) (55566-30-8)
TDLo (oral) 650 mg/kg/13 weeks - intermittent (rat)

Skin Contact may result in irritation, redness, pain and rash.

PRODUCT NAME IDCIDE-20

Eye	Contact may result in irritation, lacrimation, pain and redness.
Sensitisation	May cause an allergic skin reaction. This product is not classified as a respiratory sensitiser.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in respiratory irritation, nausea, dizziness, drowsiness and headache.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

75% TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE (55566-30-8):

LC50 (Rainbow Trout) = 119 mg/L/96 hr
LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr
EC50 (Daphnia Magna) = 19 mg/L/48 hr
LC50 (Brown Shrimp) = 340 mg/L/96 hr
LC50 (Mysid Shrimp) = 9.5 mg/L/96 hr
LC50 (Sheepshead Minnow) = 94 mg/L/96 hr
LC50 (Jevenile Plaice) = 86 mg/L/96 hr

Waste Water management
EC50 (Activated Sludge) = 24 mg/L/3 hr

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name CITRIC ACID

Synonyms 2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID • CITRIC ACID ANHYDROUS • CITRIC ACID MONOHYDRATE

1.2 Uses and uses advised against

Uses INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Skin Corrosion/Irritation: Category 2

Serious Eye Damage / Eye Irritation: Category 2A

Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Prevention statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

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

PRODUCT NAME CITRIC ACID**Response statements**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove 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.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P321 Specific treatment is advised - see first aid instructions.
P362 Take off contaminated clothing and wash before re-use.

Storage statements

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

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CITRIC ACID	77-92-9	201-069-1	>99%
WATER	7732-18-5	231-791-2	<1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes, skin and respiratory system.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from moisture, incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	At high dust levels, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE CRYSTALLINE POWDER
Odour	ODOURLESS
Flammability	COMBUSTIBLE
Flash point	174°C
Boiling point	175°C (Decomposes)
Melting point	153°C

PRODUCT NAME CITRIC ACID

9.1 Information on basic physical and chemical properties

Evaporation rate	NOT AVAILABLE
pH	2.2 (0.1M Solution)
Vapour density	NOT AVAILABLE
Specific gravity	1.665
Solubility (water)	1330 kg/m ³ @ 20°C
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	345°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.
LD50 (Ingestion): 3000 mg/kg (rat)
LD50 (Intraperitoneal): 290 mg/kg (rat)
LD50 (Intravenous): 42 mg/kg (mouse)
LDLo (Ingestion): 7000 mg/kg (rabbit)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CITRIC ACID	3000 mg/kg (rat)	> 2000 mg/kg (rat)	--

Additional ingredient toxicity values:

CITRIC ACID (77-92-9)	
LD50 (intraperitoneal)	290 mg/kg (rat)
LD50 (intravenous)	42 mg/kg (mouse)
LDLo (oral)	7000 mg/kg (rabbit)

Skin Irritating to the skin. Contact may result in irritation, redness, rash and dermatitis.

Eye Irritating to the eyes. Contact may result in irritation, lacrimation, pain and redness. May result in burns with prolonged contact.

Sensitisation Not classified as causing skin or respiratory sensitisation. However, citric acid has the potential to cause allergic effects.

Mutagenicity Insufficient data available to classify as a mutagen.

PRODUCT NAME CITRIC ACID

Carcinogenicity	Insufficient data available to classify as a carcinogen.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Irritating to the respiratory system. Over exposure may result in irritation of the nose and throat, with coughing.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Leuciscus idus melanotus): 440 mg/L/48hrs.
LC50 (Daphnia magna (Water flea)): 1.535 mg/L/24hrs.

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

Citric acid is expected to have very high mobility in soil (HSDB).

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Neutralise with lime, anion exchanger or similar. For small amounts, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

PRODUCT NAME CITRIC ACID

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

PRODUCT NAME CITRIC ACID

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **MAGNESIUM OXIDE**
Synonyms CALCINED MAGNESIA • MAGNESIA • MAGOXI16 / 27 - PRODUCT CODE

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE • PH INDICATOR

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
MAGNESIUM OXIDE	1309-48-4	215-171-9	>94%
CALCIUM OXIDE	1305-78-8	215-138-9	<3.5%
SILICON DIOXIDE (SILICA, AMORPHOUS)	7631-86-9	231-545-4	<2.5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

PRODUCT NAME **MAGNESIUM OXIDE**

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve magnesium oxides when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure product is adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Calcium oxide	SWA [AUS]	--	2	--	--
Calcium oxide	SWA [Proposed]	--	1	--	--
Fumed silica (respirable dust)	SWA [AUS]	--	2	--	--
Magnesium oxide (fume)	SWA [AUS]	--	10	--	--

PRODUCT NAME **MAGNESIUM OXIDE**

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE GRANULES
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	3600°C
Melting point	2800°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	3.6 - 3.7
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	0 %

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

PRODUCT NAME **MAGNESIUM OXIDE**

10.5 Incompatible materials

Incompatible (violently) with interhalogens (e.g. bromine pentafluoride, chlorine trifluoride) and phosphorus pentachloride. May ignite or explode when heated with aluminium powder. Also incompatible with acids (e.g. nitric acid) and dampness as material hydrates.

10.6 Hazardous decomposition products

May evolve magnesium oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SILICON DIOXIDE (SILICA, AMORPHOUS)	3160 mg/kg (rat)	--	--

Skin Contact may result in irritation, redness, rash and dermatitis.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure. However, over exposure may result in irritation of the nose and throat, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, cover with moist sand, vermiculite or similar to avoid dust hazard and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation). RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary. PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME MAGNESIUM OXIDE

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

TRIETHANOLAMINE

Issue Date 08-Aug-2022

Revision date 08-Aug-2022

Version 1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name TRIETHANOLAMINE

Product Code NDF00931

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use No information available

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4 - (H302)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)

Label elements

Exclamation mark
Health hazard

Corrosion

**Signal word**

Danger

Hazard statements

H302 - Harmful if swallowed

H315 - Causes skin irritation

H318 - Causes serious eye damage

H351 - Suspected of causing cancer

H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor/physician

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

Toxic to aquatic life with long lasting effects

Toxic to aquatic life

General Hazards

No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Not applicable

Mixture

Chemical name	CAS No	Weight-%	REACH registration number
Triethanolamine	102-71-6	>60	01-2119486482-31-xxxx
Diethanolamine	111-42-2	10-30	01-2119488930-28-XXXX

Section 4: FIRST AID MEASURES

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.
Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media	Dry chemical. Foam. Carbon dioxide (CO ₂).

Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Special protective actions for fire-fighters

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

Hazchem code	Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.

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

For emergency responders	Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED**Precautions for safe handling**

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**Control parameters****Exposure Limits**

Chemical name	Australia
Triethanolamine 102-71-6	5 mg/m ³
Diethanolamine 111-42-2	3 ppm 13 mg/m ³

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Hand protection Wear suitable gloves. Impervious gloves.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Mild. ammonia like.
Appearance	liquid	Odor threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	10.5	1% solution
Melting point / freezing point	12 °C	No information available
Boiling point / boiling range	335 °C	
Flash point	190 °C	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure	< 1 kPa @ 20°C	No data available
Vapor density	4.80 (Air = 1)	No data available
Relative density	1.123	No information available
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		
Dynamic viscosity	450 mPa s @ 25 °C	

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known based on information supplied.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure****Product Information**

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes. (based on components).
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea Harmful if swallowed (based on components)

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Numerical measures of toxicity - Product Information

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

ATEmix (oral)	1,303.70 mg/kg
ATEmix (dermal)	16,587.60 mg/kg

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity
 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Triethanolamine	= 4190 mg/kg (Rat)	> 20000 mg/kg (Rabbit)	-
Diethanolamine	= 780 mg/kg (Rat)	= 11.9 mL/kg (Rabbit)	-

See section 16 for terms and abbreviations

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

Skin corrosion/irritation	Classification based on data available for ingredients. Irritating to skin.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available. None known.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis).
Aspiration hazard	No information available.

Section 12: ECOLOGICAL INFORMATION**Ecotoxicity****Ecotoxicity**

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

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Triethanolamine	EC50: =169mg/L (96h, <i>Desmodesmus subspicatus</i>) EC50: =216mg/L (72h, <i>Desmodesmus subspicatus</i>)	LC50: 10600 - 13000mg/L (96h, <i>Pimephales promelas</i>) LC50: 450 - 1000mg/L (96h, <i>Lepomis macrochirus</i>) LC50: >1000mg/L (96h, <i>Pimephales promelas</i>)	-	-
Diethanolamine	EC50: 2.1 - 2.3mg/L (96h, <i>Pseudokirchneriella subcapitata</i>) EC50: =7.8mg/L (72h, <i>Desmodesmus subspicatus</i>)	LC50: 1200 - 1580mg/L (96h, <i>Pimephales promelas</i>) LC50: 4460 - 4980mg/L (96h, <i>Pimephales promelas</i>) LC50: 600 - 1000mg/L (96h, <i>Lepomis macrochirus</i>)	EC50 = 73 mg/L 5 min EC50 > 16 mg/L 16 h	EC50: =55mg/L (48h, <i>Daphnia magna</i>)

Persistence and degradability

Persistence and degradability No information available.

Component Information			
Diethanolamine (111-42-2)			
Method	Exposure time	Value	Results
OECD Test No. 301F: Ready Biodegradability: Manometric	28 days	93%	Readily biodegradable

Respirometry Test (TG 301 F)			

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Triethanolamine	-2.53
Diethanolamine	-2.46

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS**Waste treatment methods**

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

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

Section 15: REGULATORY INFORMATION**Regulatory information****National regulations****Australia**

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA Complies

DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/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

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 08-Aug-2022

Revision date 08-Aug-2022

Revision Note

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

**Driscal® D Polymer**

Version 1.12

Revision Date 2023-06-22

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product information**

Product Name : Driscal® D Polymer
Material : 1112534, 1016818

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Local : Chevron Phillips Chemicals Australia Pty Ltd
Level 8
Chadstone Tower 1
1341 Dandenong Road, Chadstone, VIC
Australia 3148
Hours of Operation: 9:00 a.m. - 5:00 p.m.

SDS Requests: 61 3 9964 5355
Technical Information: 61 3 9964 5355
Responsible Party: Product Safety Group
Email:sds@cpchem.com

Emergency telephone:**Health:**

866.442.9628 (North America)
1.832.813.4984 (International)
61 3 9964 5355 (Australia)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212

Driscal® D Polymer

Version 1.12

Revision Date 2023-06-22

Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Finland: 0800 147 111 09 471 977 (24 hours/day)
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
 Iceland: 543 2222 (24 hours/day, 7 days/week)
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371
 67042473. (24 hours.)
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Lithuania: +370 (85) 2362052
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
 Malta: +356 2395 2000
 The Netherlands: NVIC: +31 (0)88 755 8000
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Portugal: CIAV phone number: +351 800 250 250
 Romania: +40213183606
 Slovakia: +421 2 5477 4166
 Slovenia: Phone number: 112
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24
 hours/day, 7 days/week)
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group
 E-mail address : SDS@CPChem.com
 Website : www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
Model Work Health and Safety Regulations 2011, Model Code of Practice for the Labelling of
Workplace Hazardous Chemicals (2011), Guidance on the Classification of Hazardous
Chemicals under the WHS Regulations (2012) (GHS 2009)

Classification

Not a hazardous substance or mixture.

Labeling

Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Synonyms : High Temperature Polymer

Contains no hazardous ingredients according to GHS.

SECTION 4: First aid measures

General advice : No hazards which require special first aid measures.

Driscal® D Polymer

Version 1.12

Revision Date 2023-06-22

If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

SECTION 6: Accidental release measures

Personal precautions	:	Avoid dust formation.
Environmental precautions	:	No special environmental precautions required.
Methods for cleaning up	:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
Additional advice	:	Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage**Handling**

SDS Number:100000066569

3/9

Driscall® D Polymer

Version 1.12

Revision Date 2023-06-22

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

SECTION 8: Exposure controls/personal protection**Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : Eye wash bottle with pure water. Safety glasses.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the

Driscal® D Polymer

Version 1.12

Revision Date 2023-06-22

specific work-place. Wear as appropriate:. Protective suit.
Safety shoes.

Hygiene measures : General industrial hygiene practice.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

Form : Powder
Physical state : solid
Color : White
Odor : no odor
Odor Threshold : No data available

Safety data

Flash point : Not applicable

Lower explosion limit : No data available
Upper explosion limit : No data available
Oxidizing properties : No

Autoignition temperature : No data available
Thermal decomposition : No data available

Molecular weight : Not applicable
pH : Not applicable
Pour point : No data available

Boiling point/boiling range : No data available
Vapor pressure : No data available
Relative density : 1.44

Density : No data available
Water solubility : soluble
Partition coefficient: n-octanol/water : Pow: < 3
Viscosity, kinematic : No data available
Relative vapor density : No data available
Evaporation rate : No data available

Driscal® D Polymer

Version 1.12

Revision Date 2023-06-22

SECTION 10: Stability and reactivity

- Reactivity** : Stable at normal ambient temperature and pressure.
- Chemical stability** : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Possibility of hazardous reactions**
- Hazardous reactions** : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.
- Conditions to avoid** : No data available.
- Materials to avoid** : No data available.
- Thermal decomposition** : No data available
- Other data** : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

- Driscal® D Polymer**
Further information : The product contains no substances classified as hazardous to health in concentrations which should be taken into account.

SECTION 12: Ecological information**Ecotoxicity effects**

- Toxicity to fish** : LC50: > 1,800 mg/l
Exposure time: 96 h
Species: Scophthalmus maximus (Flatfish, Flounder)
static test Method: PARCOM Protocol Part B
- Toxicity to daphnia and other aquatic invertebrates** : LC50: 599 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
static test Method: ISO TC147/SC5/WG2
- Toxicity to algae** : EC50: 2,693 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (marine diatom)
static test Method: ISO 10253

Driscall® D Polymer

Version 1.12

Revision Date 2023-06-22

Biodegradability : This material is not expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation : Accumulation in aquatic organisms is unlikely.
The polymer is too large to be bioavailable.

Mobility : No data available

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Driscall® D Polymer

Version 1.12

Revision Date 2023-06-22

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**National legislation**

Standard for the Uniform : No poison schedule number allocated
Scheduling of Medicines and
Poisons

Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	All substances listed as active on the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory
Korea KECI	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	This product contains one or more substances that have been notified under New Substances Notification laws. However, only CPChem and other independent notifiers are approved to be the importers of record.

Driscall® D Polymer

Version 1.12

Revision Date 2023-06-22

SECTION 16: Other information**Further information**

Legacy SDS Number : 244990

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIRC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

Issue Date 21-Feb-2020

Revision date 13-Apr-2022

Version 1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

1

Product identifier

Product Name CleanTrol™

Product Code NDF00508

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use Fluid loss control additive

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification**General Hazards**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Chemical name	CAS No	Weight-%	REACH registration number
Starch	9005-25-8	100	No data available

Section 4: FIRST AID MEASURES**Description of first aid measures**

Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products	Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
Hazchem code	Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Australia
Starch 9005-25-8	10 mg/m ³

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	No information available.
Appearance	Powder	Odor threshold	No information available
Color	Off-white		

Property	Values	Remarks • Method
pH	5 - 11.5 (in 4% solution)	
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point		Not applicable
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.5	No information available
Water solubility		No information available
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	30-40 lbs/cu ft
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity	No information available.

Chemical stability

Stability	Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known based on information supplied.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure****Product Information**

.

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

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

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

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

Symptoms No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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.
None known.

Serious eye damage/eye irritation No information available.
None known.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

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

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Unknown aquatic toxicity	0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability	No information available.

Bioaccumulative potential

Bioaccumulation	No information available.

Mobility

Mobility in soil	No information available.
Mobility	No information available.

Other adverse effects

Other adverse effects	No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Section 14: TRANSPORT INFORMATION

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

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

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/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
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 21-Feb-2020

Revision date 13-Apr-2022

Revision Note

No information available.

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

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

End of Safety Data Sheet

Issue Date 15-Mar-2017

Revision date 23-Mar-2022

Version 1.1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name GageTrol™

Product Code NDF00018

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use filtration control agent

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification**General Hazards**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	-	100

Section 4: FIRST AID MEASURES**Description of first aid measures**

Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media	Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products	Carbon oxides.

Special protective actions for fire-fighters

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

Hazchem code	Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED**Precautions for safe handling**

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible materials	Strong oxidizing agents Strong acids

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**Control parameters**

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

Biological occupational exposure limits	Not applicable

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Slight.
Appearance	Powder	Odor threshold	No information available
Color	Off-white		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	9.0 - 10.5	4% solution
Melting point / freezing point		Not applicable
Boiling point / boiling range		Not applicable
Flash point		Not applicable
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.5	
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	30-45 lb/ft ³ (480-720 kg/m ³)
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizing agents. Strong acids.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure****Product Information**

.

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

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

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

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

Symptoms No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity

100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

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

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

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

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

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

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations**Australia**

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 15-Mar-2017

Revision date 23-Mar-2022

Revision Note

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided

in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name JK-161 LV

Synonyms JK - 161 LV • LOW MOLECULAR WEIGHT PHPA • PARTIALLY HYDROLYZED POLYACRYLAMIDE • PHPA

1.2 Uses and uses advised against

Uses ENCAPSULATING AGENT • HIGH PERFORMANCE WBM

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ACRYLAMIDE, SODIUM ACRYLATE COPOLYMER	25085-02-3	607-529-1	>90%
WATER	7732-18-5	231-791-2	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Acrylamide	SWA [AUS]	--	0.03	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE GRANULAR SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	0.8
Solubility (water)	10 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 401).
Skin	Low irritant. Prolonged or repeated contact may result in mild irritation, rash and dermatitis.
Eye	Low to moderate irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation. However, allergic reactions are possible.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	This product may contain trace amounts of residual acrylamide, which is classified as a probable human carcinogen (IARC Group 2A). However, due to the very low levels present, adverse health effects are not anticipated with normal use.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012)
Mysidopsis bahia = 48hr LC50 = 16.2 mg/L.
Menidia beryllina = 48hr LC50 = 34.2 mg/L.
Scophthalmus Maximus = 96hr LC50 > 1000 mg/L.
Skeletonemia costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L]
Acartia tonsa = 48 hr EC50 = 393 mg/L [NOEC = 112 mg/L]
Corophium Volutator = 10 Day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg]

12.2 Persistence and degradability

Not readily biodegradable (by OECD criteria).

12.3 Bioaccumulative potential

Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code	None allocated.

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information ACRYLIC - ACRYLAMIDE RESINS: These resins are generally of low toxicity. Toxicity increases with presence of significant concentrations of acrylic - acrylamide monomers. These monomers have been linked with the development of skin sensitisation.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name JK-261 HP
Synonyms RHEOCHEM JK 261 HP

1.2 Uses and uses advised against

Uses DRILLING FLUID

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website <http://www.newpark.com>

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ADIPIC ACID	124-04-9	204-673-3	<2.5%
SULPHAMIC ACID	5329-14-6	226-218-8	<2.5%
ACRYLAMIDE-ACRYLOXY ETHYL TRIMETHYL AMMONIUM CHLORIDE	69418-26-4	-	>60%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

PRODUCT NAME JK-261 HP

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated. May evolve nitrogen oxides and hydrogen chloride gas when heated to decomposition.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store between 0°C and 35°C. Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Acrylamide	SWA [AUS]	--	0.03	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE GRANULAR SOLID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	2.5 to 4.5 (5 g/L solution)
Vapour density	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	0.85

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve nitrogen oxides and hydrogen chloride gas when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. Oral LD50 (rat) is > 5000 mg/kg.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ADIPIC ACID	1900 mg/kg (mouse); 5560 mg/kg (rat)	> 2000 mg/kg (rabbit)	>7.7 mg/L (rat)
SULPHAMIC ACID	3160 mg/kg (rat)	--	--

Additional ingredient toxicity values:

ADIPIC ACID (124-04-9)
 LD50 (intraperitoneal) 275 mg/kg (rat)
 LD50 (intravenous) 680 mg/kg (mouse)
 LDLo (oral) 3600 mg/kg (rat)

SULPHAMIC ACID (5329-14-6)
 LDLo (intraperitoneal) 100 mg/kg (rat)

Skin Not classified as a skin irritant. Contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure No known effects from this product.

STOT - repeated exposure No known effects from this product.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The effects of this product on aquatic organisms are rapidly and significantly mitigated by the presence of dissolved organic carbon in the aquatic environment. Toxicity to daphnia: EC50/Daphnia/48 hours > 20-50 mg/L

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name JK-261

Synonyms HIGH MOLECULAR WEIGHT PHPA • JK 261 • JK261 • PARTIALLY HYDROLYZED POLYACRYLAMIDE • PHPA

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
COPOLYMER OF ACRYLAMIDE AND ACRYLIC ACID, SODIUM SALT	25987-30-8	607-842-3	>90%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE GRANULAR SOLID
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	0.8
Solubility (water)	10 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects

PRODUCT NAME JK-261

	are not anticipated. LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 401).
Skin	Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation, rash and dermatitis.
Eye	Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	Not classified as a carcinogen. This product may contain trace amounts of residual acrylamide, which is classified as a probable human carcinogen (IARC Group 2A). However, due to the very low levels present, adverse health effects are not anticipated with normal use.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012)
Mysidopsis bahia = 48hr LC50 = 16.2 mg/L.
Menidia beryllina = 48hr LC50 = 34.2 mg/L.
Scophthalmus Maximus = 96hr LC50 > 1000 mg/L.
Skeletonomia costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L]
Acartia tonsa = 48 hr EC50 = 393 mg/L [NOEC = 112 mg/L]
Corophium Volutator = 10 Day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg]

12.2 Persistence and degradability

Not readily biodegradable (by OECD criteria).

12.3 Bioaccumulative potential

Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information ACRYLIC - ACRYLAMIDE RESINS: These resins are generally of low toxicity. Toxicity increases with presence of significant concentrations of acrylic - acrylamide monomers. These monomers have been linked with the development of skin sensitisation.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name DEFOAM AP 400
Synonyms DEFOAMER

1.2 Uses and uses advised against

Uses TREATMENT OF FOAMING IN DRILLING FLUIDS

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POLYETHYLENE GLYCOL	25322-68-3	500-038-2	45 to 60%
OCTAN-2-OL	123-96-6	204-667-0	40 to 55%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR COLOURLESS LIQUID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	100°C to 102°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Specific gravity	1.00 to 1.17
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Freezing point	-7°C to 0°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POLYETHYLENE GLYCOL	> 15,000 mg/kg (rat)	> 20,000 mg/kg (rabbit)	--
OCTAN-2-OL	--	2000 mg/kg (rat)	--

Skin Not classified as a skin irritant. Contact may cause temporary mild skin irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

AVADEFOAM NS

Issue Date 18-Apr-2017

Revision Date 10-Mar-2020

Version 1.1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

1

Product identifier

Product Name AVADEFOAM NS

Product Code NDF00251

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

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards**General Hazards**

No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Not applicable

Mixture**Additional information**

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

Section 4: FIRST AID MEASURES**Description of first aid measures**

Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media Water. Carbon dioxide (CO₂).

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED**Precautions for safe handling**

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials None known

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**Control parameters**

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

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state	liquid		
Appearance	liquid	Odor	Slight.
Color	clear	Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		No data available
Melting point / freezing point		No data available
Boiling point / boiling range		No data available
Flash point	> 100 °C	
Evaporation rate		No data available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.95-0.97	
Water solubility	Insoluble in water	
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	0.95-0.97 g/cm ³
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY**Reactivity**

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known.

Hazardous Decomposition Products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

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

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

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

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

Symptoms No information available.

Numerical measures of toxicity - Product Information

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

ATEmix (oral) 10,010.00 mg/kg

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity

95 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

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

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Unknown aquatic toxicity	95 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability

Persistence and degradability	No information available.

Bioaccumulative potential

Bioaccumulation	No information available.

Mobility

Mobility in soil	No information available.
Mobility	No information available.

Other adverse effects

Other adverse effects	No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods**Waste from residues/unused products**

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging

Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION**ADG**

Not Regulated

IATA

Not Regulated

IMDG

Not Regulated

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

No information available

Section 15: REGULATORY INFORMATION**Regulatory information****National regulations****Australia**

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Does not comply
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/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

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 18-Apr-2017

Revision Date 10-Mar-2020

Revision Note

No information available.

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

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

End of Safety Data Sheet

AVAPERM NF

Issuing Date 29-Jul-2016

Revision date 20-Sep-2023

Version 2.9

SECTION 1: Identification of the substance/mixture and of the company/undertaking

0

1.1. Product identifier

Product Code NDF00185

Product Name AVAPERM NF

Pure substance/mixture Mixture

Contains Hexanedinitrile, hydrogenated, high-boiling fraction, Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine, Hexamethylenediamine

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use shale inhibitor

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier

Newpark Drilling Fluids S.r.l.

Via Salaria 1313/C

00138 ROMA (Italy)

For further information, please contact

Contact Point Telephone: + 39 06 8856111
 Fax: +39 06 8889363
 Website: www.newpark.com

E-mail address hse-hqit@newpark.com

1.4. Emergency telephone number

Emergency Telephone - §45 - (EC)1272/2008	
Europe	112
Croatia	+385 1 7776 920 ; +385 01 2348 342 (Centar za kontrolu otrovanja, 24 sata)
Cyprus	1401
France	+(33)-975181407
Germany	0800-181-7059; +(49)- 69643508409
Hungary	+(36)-18088425
Italy	800-789-767; +(39)-0245557031 Milano 24/24 Ospedale Niguarda Ca'grande Piazza ospedale maggiore 3 +39 0266101029 Roma 24/24 Policlinico Gemelli

	Largo Agostino Gemelli 8 +39 063054343
Netherlands	+(31)-858880596
Romania	+40213183606, Institutul Național de Sănătate Publică (L-V între 08.00-15.00)
Spain	900-868538; +(34)-931768545
Switzerland	145, (+41) 435082011
United Kingdom	+(44)-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Dermal	Category 4 - (H312)
Skin corrosion/irritation	Category 1 Sub-category A - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitization	Category 1B - (H317)
Specific target organ toxicity (single exposure)	Category 3 - (H335)
Category 3 Respiratory irritation	

2.2. Label elements

Contains Hexanedinitrile, hydrogenated, high-boiling fraction, Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine, Hexamethylenediamine



Signal word

Danger

Hazard statements

H302 - Harmful if swallowed

H312 - Harmful in contact with skin

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

H335 - May cause respiratory irritation

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

2.3. Other hazards

Harmful to aquatic life.

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine 68815-47-4	10-30	01-2119967791-24-XX XX	907-605-7	Acute Tox. 4 (H312) Acute Tox. 4 (H302) Skin Corr. 1A (H314) STOT SE 3 (H335) Eye Dam. 1 (H318) Skin Sens.1B (H317) Aquatic Chronic 3 (H412)	-	-	-
Hexamethylenediamine 124-09-4	5-20	01-2119473981-28-XX XX	204-679-6	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) STOT SE 3 (H335)	-	-	-
1,2-cyclohexanediamine 694-83-7	1-10	01-2119976312-37-XX XX	211-776-7	Acute Tox. 4 (H332) Acute Tox. 4 (H312) Acute Tox. 4 (H302) Skin Corr. 1A (H314) STOT SE 3 (H335) Eye Dam. 1 (H318)	-	-	-

Full text of H- and EUH-phrases: see section 16**Acute Toxicity Estimate**

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine 68815-47-4	No data available	1500	No data available	No data available	No data available
Hexamethylenediamine 124-09-4	750	1110	No data available	No data available	No data available
1,2-cyclohexanediamine 694-83-7	4556	1870	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures**4.1. Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

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.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention. 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.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Itching. Rashes. Hives.

4.3. 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

5.1. Extinguishing media

Suitable Extinguishing Media	Water. Carbon dioxide (CO ₂).
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	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.
Hazardous combustion products	Carbon oxides. Nitrogen oxides (NO _x).

5.3. Advice for firefighters

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	In the case of vapor formation use a respirator with an approved filter.

6.2. 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.

6.3. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal. Soak up with inert absorbent material.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections	See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. 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. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists. Wear personal protective clothing (see section 8).
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Protect from moisture. Store away from other materials.
Storage class (TRGS 510)	Storage class 8A
Packaging materials	Plastic container. IBCs.

7.3. Specific end use(s)

Risk Management Methods (RMM)	The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure Limits**

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia

Hexamethylenediamine 124-09-4	-	TWA: 0.5 ppm TWA: 2.3 mg/m ³ H*	TWA: 0.5 ppm TWA: 2.3 mg/m ³	TWA: 1.0 mg/m ³	-
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Hexamethylenediamine 124-09-4	-	-	TWA: 0.5 ppm TWA: 2.3 mg/m ³	-	-
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Hexamethylenediamine 124-09-4	-	-	-	-	TWA: 2.3 mg/m ³ b*
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Hexamethylenediamine 124-09-4	TWA: 0.5 ppm TWA: 2.3 mg/m ³ STEL: 1.5 ppm STEL: 6.9 mg/m ³	-	TWA: 0.5 ppm TWA: 2.4 mg/m ³	TWA: 0.1 mg/m ³	O* TWA: 0.1 mg/m ³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Hexamethylenediamine 124-09-4	-	-	-	Ceiling: 0.5 ppm Ceiling: 1 mg/m ³ H*	-
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Hexamethylenediamine 124-09-4	TWA: 0.5 ppm	TWA: 1 mg/m ³ STEL: 5 mg/m ³	-	-	TWA: 0.5 ppm TWA: 2.4 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.

Derived No Effect Level (DNEL)**Oral**

Long term.

hexamethylenediamine

General population: 0.56 mg/kg bw/day - Frequency: Long Term, local effects Human Oral

1,2-cyclohexanediamine population: 0.75 mg/kg bw/day - Frequency: Long Term, systemic effects Human Oral

Dermal

1,2-cyclohexanediamine

Worker Industry: 1.5 mg/kg bw/day - Frequency: Long Term, systemic effects Human

Dermal

General population: 0.75 mg/kg bw/day - Frequency: Long Term, systemic effects Human

Dermal

Inhalation

Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine

Worker Industry: 0.42 mg/m³ - Frequency: Long Term, local effects Human Inhalation

hexamethylenediamine

Worker Industry: 0.54 mg/m³ - Frequency: Long Term, local effects Human Inhalation

General population: 0.4 mg/m³ - Frequency: Long Term, local effects Human Inhalation

1,2-cyclohexanediamine

Worker Industry: 0.25 mg/m³ - Frequency: Long Term, local effects Human Inhalation

General population: 0.125 mg/m³ - Frequency: Long Term, local effects Human Inhalation

Derived No Effect Level (DNEL)**Inhalation**

Short term.

Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine

Worker Industry: 0.84 mg/m³ - Frequency: Short Term, local effects Human Inhalation

hexamethylenediamine

Worker Industry: 1.62 mg/m³ - Frequency: Short Term, local effects Human Inhalation

General population: 1.2 mg/m³ - Frequency: Short Term, local effects Human Inhalation

1,2-cyclohexanediamine

Worker Industry: 0.5 mg/m³ - Frequency: Short Term, local effects Human Inhalation

General population: 0.25 mg/m³ - Frequency: Short Term, local effects Human Inhalation

Predicted No Effect Concentration (PNEC)**Freshwater**

Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine

Fresh Water - Value: 9.3 µg/l

Hexamethylenediamine

Fresh Water - Value: 0.42 mg/l

1,2-cyclohexanediamine

Fresh Water - Value: 0.42 mg/l

Freshwater sediment

Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine

Marine water	Freshwater sediments - Value: 3.86 mg/kg
	Hexamethylenediamine
	Freshwater sediments - Value: 1.44 mg/kg
	1,2-cyclohexanediamine
	Freshwater sediments - Value: 1.82 mg/kg
Marine sediment	Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine
	Marine water - Value: 0.93 µg/l
	Hexamethylenediamine
	Marine water - Value: 0.04 mg/l
	1,2-cyclohexanediamine
Soil	Marine water - Value: 0.042 mg/l
	Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine
	Marine water sediments - Value: 0.386 mg/kg
	Hexamethylenediamine
	Marine water sediments - Value: 0.144 mg/kg
	1,2-cyclohexanediamine
	Marine water sediments - Value: 0.182 mg/kg
	Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine
	Soil (agricultural) - Value: 0.766 mg/kg
	Hexamethylenediamine
	Soil (agricultural) - Value: 0.0541 mg/kg
	1,2-cyclohexanediamine
	Soil (agricultural) - Value: 0.117 mg/kg

8.2. Exposure controls

Engineering controls	No information available.
Personal protective equipment	
Eye/face protection	Use eye protection according to EN 166, designed to protect against spray mists. Tight sealing safety goggles. Face protection shield.
Hand protection	Impervious gloves. Nitrile rubber. Gloves must conform to standard EN 374.
Skin and body protection	(EN 340). Long sleeved clothing. Chemical resistant apron.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. (EN 136, EN 140, EN 141, EN 143, EN 149, EN 405).
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	liquid
Color	brown
Odor	Pungent.
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point		No information available
Boiling point / boiling range	100 °C	
Flammability (solid, gas)		Not applicable

Flammability Limit in Air		Not applicable
Upper flammability limit:		
Lower flammability limit:		
Flash point	> 100 °C	
Autoignition temperature		No information available
Decomposition temperature		No information available
pH	9.0 - 10.0	
pH (as aqueous solution)		No information available
Kinematic viscosity		No information available
Dynamic viscosity		No information available
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Vapor pressure		No information available
Relative density	1.00-1.10	
Bulk density		
Liquid Density	1.00-1.10	
Vapor density		No information available
Particle characteristics		No information available
Particle Size		
Particle Size Distribution		

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Not applicable

9.2.2. Other safety characteristics

No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Not reactive under normal conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Stable under normal conditions. Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Incompatible materials Ketone. Phenols. Isocyanates. Acids. Bases. Oxidizing agent.

10.6. Hazardous decomposition products

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating and toxic gases and vapors.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure**Product Information**

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes 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. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

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

Numerical measures of toxicity**Acute toxicity**

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

ATEmix (oral)	1,922.60 mg/kg
ATEmix (dermal)	1,702.70 mg/kg

Unknown acute toxicity

18 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine	-	= 1500 mg/kg (Rat)	-
Hexamethylenediamine	= 750 mg/kg (Rat)	= 1110 mg/kg (Rabbit)	-
1,2-cyclohexanediamine	= 4556 mg/kg (Rat)	= 1870 mg/kg (Rat)	> 3.23 mg/L (Rat) 4 h

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

burns.

Respiratory or skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hexamethylenediamine	EC50: =14.8mg/L (96h, Pseudokirchneriella subcapitata) EC50: =15mg/L (72h, Pseudokirchneriella subcapitata)	LC50: =1825mg/L (96h, Pimephales promelas) LC50: >56mg/L (96h, Lepomis macrochirus)	EC50 = 85 mg/L 2 h	EC50: =23.4mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability Readily biodegradable.

Product Information			
Method	Exposure time	Value	Results
OECD Test No. 306: Biodegradability in Seawater	28 days	62.4% Biodegradation	Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Hexamethylenediamine	0.02
1,2-cyclohexanediamine	-0.02

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine	The substance is not PBT / vPvB
Hexamethylenediamine	The substance is not PBT / vPvB PBT assessment does not apply
1,2-cyclohexanediamine	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products	Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.
Contaminated packaging	Do not reuse empty containers.
Waste codes / waste designations according to EWC / AVV	Waste codes should be assigned by the user based on the application for which the product was used.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	
Special Provisions	None

IMDG

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable

14.6 Special precautions for user**Special Provisions** None**14.7 Maritime transport in bulk according to IMO instruments** No information available**RID****14.1 UN/ID no** Not Regulated**14.2 Proper shipping name** Not Regulated**14.3 Transport hazard class(es)** Not regulated**14.4 Packing Group** Not Regulated**14.5 Environmental hazard** Not applicable**14.6 Special precautions for user**
Special Provisions None**ADR****14.1 UN number or ID number** Not regulated**14.2 Proper shipping name** Not Regulated**14.3 Transport hazard class(es)** Not regulated**14.4 Packing Group** Not Regulated**14.5 Environmental hazard** Not applicable**14.6 Special precautions for user**
Special Provisions None**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****France****Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number
Hexamethylenediamine 124-09-4	RG 49, RG 49bis

Germany**Italy**

-D. L.Gs. 81/2008 (single text on the protection of health and safety in the workplace) and subsequent amendments and Directive 2009/161/EU-assessment of chemical risk under title IX

-Legislative Decree 3 April 2006, no 152 (environmental standards)

-"Seveso III Directive" – Legislative Decree of 26 June 2015, n° 105 (Implementation of the Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Hexamethylenediamine - 124-09-4	75.	-

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Does not comply
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/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
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment**Chemical Safety Report**

With reference to the components mentioned in Section 3, a chemical risk assessment was performed which is available consulting the REACH registration on the ECHA database.

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method

Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

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

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date 29-Jul-2016

Revision date 20-Sep-2023

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)**Disclaimer**

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.** According to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, as amended by Regulation (EC) No. 2020/878.

End of Safety Data Sheet

Issue Date 29-Jul-2016

Revision Date 07-Jul-2021

Version 1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

0

Product identifier

Product Name NewPerm™ NF

Product Code NDF00503

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use shale inhibitor

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Dermal	Category 4 - (H312)
Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitization	Category 1B - (H317)
Specific target organ toxicity (single exposure)	Category 3 - (H335)

Label elements

Exclamation mark
Corrosion



Signal word
Danger

Hazard statements

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Harmful to aquatic life

General Hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Not applicable

Mixture

Chemical name	CAS No.	Weight-%	REACH Registration Number
Hexanedinitrile, hydrogenated, high-boiling fraction	68411-90-5	30-40	No data available

Additional information

The pH of the mixture is adjusted to pH 9-10 with Hydrochloric Acid (CAS 7647-01-0)

Section 4: FIRST AID MEASURES**Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

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

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media	Dry chemical, CO2, water spray or alcohol-resistant foam.
Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NOx).

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

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

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

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

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED**Precautions for safe handling**

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

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

Incompatible materials Strong oxidizing agents Aldehydes Halogens Acids Ketone Nitrates Halogenated compounds Phenols Isocyanates

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Hand protection Wear suitable gloves. Impervious gloves.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid	Odor	Pungent.
Appearance	liquid	Odor threshold	No information available
Color	brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	9.0 - 10.0	
Melting point / freezing point		No information available
Boiling point / boiling range	100 °C	
Flash point	> 100 °C	
Evaporation rate		No information available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		Not applicable
Upper flammability limit:		Not applicable
Lower flammability limit:		Not applicable
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.00-1.10	
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		
Dynamic viscosity		

Other Information

Softening point No information available

Molecular weight No information available

VOC Content (%)	14
Liquid Density	1.00-1.10 g/cm ³
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

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

Incompatible materials

Incompatible materials Strong oxidizing agents. Aldehydes. Halogens. Acids. Ketone. Nitrates. Halogenated compounds. Phenols. Isocyanates.

Hazardous Decomposition Products

Hazardous Decomposition Products None known.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion

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

Symptoms

Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

Numerical measures of toxicity - Product Information

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

ATEmix (oral) 1,922.60 mg/kg
ATEmix (dermal) 1,754.80 mg/kg ppm mg/l

Unknown acute toxicity 18 % of the mixture consists of ingredient(s) of unknown toxicity

18 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
18 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
18 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
18 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
18 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hexanedinitrile, hydrogenated, high-boiling fraction	= 1500 mg/kg (Rat)	> 200 mg/kg (Rabbit)	-

See section 16 for terms and abbreviations

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

Skin corrosion/irritation MAY CAUSE SKIN IRRITATION.

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

Respiratory or skin sensitization May cause sensitization by skin contact.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION**Ecotoxicity**

Ecotoxicity

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

Persistence and degradability

Persistence and degradability Readily biodegradable.

Product Information			
Method	Exposure time	Value	Results
OECD Test No. 306: Biodegradability in Seawater	28 days	62.4% Biodegradation	Readily biodegradable

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information**Mobility**

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS**Waste treatment methods**

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not Regulated

IATA Not Regulated

IMDG Not Regulated

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

Section 15: REGULATORY INFORMATION**Regulatory information****National regulations****Australia**

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Does not comply
AICS	Complies
NZIoC	Complies

Legend:**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**Brunei Poison List** Not applicable.**Section 16: ANY OTHER RELEVANT INFORMATION****Issue Date** 29-Jul-2016**Revision Date** 07-Jul-2021**Revision Note**

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

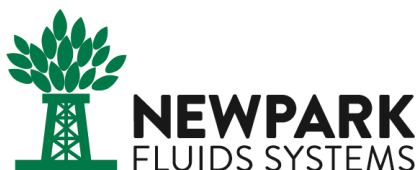
TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with

federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

End of Safety Data Sheet



SAFETY DATA SHEET

TrueScav™ HD

Issue Date 29-Aug-2018

Revision date 02-Nov-2023

Version 1.1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

0

Product identifier

Product Name TrueScav™ HD

Product Code NDF00394

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use oxygen scavenger

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand); 1-800-424-9300
(International Number);

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Dermal	Category 4 - (H312)

Label elements

Exclamation mark

**Signal word**

Warning

Hazard statements

H312 - Harmful in contact with skin

Precautionary Statements - Prevention

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

IF ON SKIN: Wash with plenty of soap and water

Call a POISON CENTER or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

May be harmful if swallowed

General Hazards

No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Chemical name	CAS No	Weight-%	REACH registration number
Sodium Erythorbate	6381-77-7	100	No data available

Section 4: FIRST AID MEASURES**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance.

Emergency telephone number

Poisons Information Center, Australia: 13 11 26

Poisons Information Center, New Zealand: 0800 764 766

Inhalation

Remove to fresh air.

Eye contact

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

Skin contact

Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

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

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides. Sodium oxides.

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

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

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid generation of dust. Wash thoroughly after handling. Wash contaminated clothing before reuse.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.
<u>Conditions for safe storage, including any incompatibilities</u>	
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.
Incompatible materials	Strong oxidizing agents

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

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

Biological occupational exposure limits	Not applicable

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.
Hand protection	Wear suitable gloves.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	No information available.
Appearance	Powder	Odor threshold	No information available
Color	White		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5 - 8	
Melting point / freezing point	160 °C	
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.2-1.7	
Water solubility	Soluble in water	

Solubility(ies)	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Hyphen	No information available
Kinematic viscosity	Not applicable
Dynamic viscosity	Not applicable

Other information

Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY**Reactivity**

Reactivity	No information available.

Chemical stability

Stability	Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.

Conditions to avoid

Conditions to avoid	None known based on information supplied.

Incompatible materials

Incompatible materials	Strong oxidizing agents.

Hazardous decomposition products

Hazardous Decomposition Products	None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure****Product Information**

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	May be absorbed through the skin in harmful amounts. Harmful in contact with skin. (based on components).

Ingestion May be harmful if swallowed

Symptoms No information available.

Numerical measures of toxicity - Product Information

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

ATEmix (oral) 5,000.00 mg/kg

ATEmix (dermal) 2,000.00 mg/kg

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Erythorbate	> 5 g/kg (Rat)	> 2000 mg/kg (Rabbit)	-

See section 16 for terms and abbreviations

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

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

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

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS**Waste treatment methods**

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

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

No information available

Section 15: REGULATORY INFORMATION**Regulatory information****National regulations****Australia**

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies

PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/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**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**Brunei Poison List** Not applicable.**Section 16: ANY OTHER RELEVANT INFORMATION****Issue Date** 29-Aug-2018**Revision date** 02-Nov-2023**Revision Note**

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name THINPOL
Synonyms DISPEX-N400 • THIN POL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
2-PROPENOIC ACID, HOMOPOLYMER	9003-01-4	618-347-7	30 to 60%
WATER	7732-18-5	231-791-2	<100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Not required under normal conditions of use.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS TO YELLOW LIQUID
Odour	SLIGHT AMMONIACAL ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 100°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	1.185 - 1.205
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

PRODUCT NAME THINPOL

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
2-PROPENOIC ACID, HOMOPOLYMER	2500 mg/kg (rat)	--	--

Additional ingredient toxicity values:

2-PROPENOIC ACID, HOMOPOLYMER (9003-01-4)

LD50 (intraperitoneal) 39 mg/kg (mouse)

LD50 (intravenous) 70 mg/kg (mouse)

Skin Not classified as a skin irritant. Contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2 mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg]

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required). Ensure that appropriate personal protective equipment is used during disposal.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

Issue Date 03-Jan-2020

Revision Date 03-Jan-2020

Version 1

1. IDENTIFICATION

Product identifier

Product Name NDFT 376

Other means of identification

Product Code NDF00528

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Fluid loss control additive

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier

Newpark Drilling Fluids LLC
21920 Merchants Way
Katy, Texas 77449
Telephone: +1 (800) 444-0682
<http://www.newpark.com>

Emergency telephone number

Emergency Telephone Chemtrec - US +1 (800) 424-9300
Chemtrec - International +1 (703) 527-3887

2. HAZARDS IDENTIFICATION

Classification

Label elements

Hazard statements

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

Appearance fibers

Physical state Solid

Odor No information available

Other Information

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity
100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substance**

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Cellulose fiber	65996-61-4	100	-	-

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 Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon monoxide. Nitrogen oxides (NOx).

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions Ensure adequate ventilation.

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 Pick up and transfer to properly labeled containers.

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

7. HANDLING AND STORAGE**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 containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/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.

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Color	yellow to brown
Appearance	fibers	Odor threshold	No information available
Odor	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7 - 8	
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		
Lower flammability limit:		
Vapor pressure		No information available
Vapor density		No information available
Specific Gravity	0.9-1.2	
Water solubility		No information available
Solubility in other solvents		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity		No information available
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

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

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

Information on toxicological effects

Symptoms	No information available.

Numerical measures of toxicity**Acute toxicity**

Unknown acute toxicity	100 % of the mixture consists of ingredient(s) of unknown toxicity
	100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
	100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
	100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
	100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
	100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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.

12. ECOLOGICAL INFORMATION

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

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

14. TRANSPORT INFORMATION

<u>DOT</u>	Not Regulated
<u>TDG</u>	Not Regulated
<u>MEX</u>	Not Regulated
<u>IATA</u>	Not Regulated
<u>IMDG</u>	Not Regulated

15. REGULATORY INFORMATION

Regulatory information

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

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

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

NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 0	Flammability 0	Instability 0	Physical and chemical properties -
<u>HMIS</u>	Health hazards 0	Flammability 0	Physical hazards 0	Personal protection X

Issue Date 03-Jan-2020

Revision Date 03-Jan-2020

Revision Note No information available.

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state,

provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

Issue Date 03-Jan-2020

Revision Date 03-Jan-2020

Version 1

1. IDENTIFICATION

Product identifier

Product Name NDFT 377

Other means of identification

Product Code NDF00528-1

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Fluid loss control additive

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier

Newpark Drilling Fluids LLC
21920 Merchants Way
Katy, Texas 77449
Telephone: +1 (800) 444-0682
<http://www.newpark.com>

Emergency telephone number

Emergency Telephone Chemtrec - US +1 (800) 424-9300
Chemtrec - International +1 (703) 527-3887

2. HAZARDS IDENTIFICATION

Classification

Label elements

Hazard statements

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

Appearance fibers

Physical state Solid

Odor No information available

Other Information

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity
100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substance**

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Cellulose fiber	65996-61-4	100	-	-

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 Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon monoxide. Nitrogen oxides (NOx).

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions Ensure adequate ventilation.

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 Pick up and transfer to properly labeled containers.

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

7. HANDLING AND STORAGE**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 containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/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.

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Color	yellow to brown
Appearance	fibers	Odor threshold	No information available
Odor	No information available		

Property	Values	Remarks • Method
pH	7 - 8	
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		
Lower flammability limit:		
Vapor pressure		No information available
Vapor density		No information available
Specific Gravity	0.9-1.2	
Water solubility		No information available
Solubility in other solvents		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity		No information available
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

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

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

Information on toxicological effects

Symptoms	No information available.

Numerical measures of toxicity**Acute toxicity**

Unknown acute toxicity	100 % of the mixture consists of ingredient(s) of unknown toxicity
	100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
	100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
	100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
	100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
	100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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.

12. ECOLOGICAL INFORMATION

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

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

14. TRANSPORT INFORMATION

<u>DOT</u>	Not Regulated
<u>TDG</u>	Not Regulated
<u>MEX</u>	Not Regulated
<u>IATA</u>	Not Regulated
<u>IMDG</u>	Not Regulated

15. REGULATORY INFORMATION

Regulatory information

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

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

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

NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 0	Flammability 0	Instability 0	Physical and chemical properties -
<u>HMIS</u>	Health hazards 0	Flammability 0	Physical hazards 0	Personal protection X

Issue Date 03-Jan-2020

Revision Date 03-Jan-2020

Revision Note No information available.

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state,

provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name DYNAFIBER (TM) AP (F, M, C)
Synonyms DYNAFIBER • NDFT 376 • NDFT 377

1.2 Uses and uses advised against

Uses LOST CIRCULATION MATERIAL

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ORGANIC FIBRE(S)	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Relative density	0.9 to 1.2
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ORGANIC FIBRE(S)	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m ³ /4 hours (rat)

Skin Not classified as a skin irritant. Skin irritation is not anticipated under normal conditions of use.

Eye Not classified as an eye irritant. Eye irritation is not anticipated under normal conditions of use.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation). COMBUSTIBLE - EXPLOSIVE CARBONACEOUS DUST: Carbonaceous/organic dusts have the potential, with dispersion, to present an explosion hazard if an ignition source exists. All equipment used to handle, transfer or store this product MUST BE cleaned thoroughly prior to cutting, welding, drilling or exposure to any other form of heat or ignition sources. If bulk stored, containers should be ventilated on a routine basis to avoid vapour accumulation (where applicable, eg for flocculants). PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME DYNAFIBER (TM) AP (F, M, C)**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **CALCIUM CHLORIDE POWDER 94-97%**
Synonyms **CALCIUM CHLORIDE ANHYDRATE**

1.2 Uses and uses advised against

Uses CONCRETE CONDITIONER • DESICCANT • DUST CONTROL AGENT • FOOD ADDITIVE • INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website <http://www.newpark.com>

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Serious Eye Damage / Eye Irritation: Category 2A

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms



Hazard statements

H319 Causes serious eye irritation.

Prevention statements

P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.

PRODUCT NAME CALCIUM CHLORIDE POWDER 94-97%**Storage statements**

None allocated.

Disposal statements

None allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CALCIUM CHLORIDE ANHYDROUS	10043-52-4	233-140-8	94 to 97%
SODIUM CHLORIDE	7647-14-5	231-598-3	1 to 5%
WATER	7732-18-5	231-791-2	1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (chlorides) when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	> 1600°C
Melting point	772°C
Evaporation rate	NOT RELEVANT
pH	7.0 to 9.0
Vapour density	NOT AVAILABLE
Relative density	2.15
Solubility (water)	590 kg/m ³ (Approximately)
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid contact with incompatible substances.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid), methyl vinyl ether, zinc/ galvanised metals, bromine trifluoride, boron oxide and calcium oxide. May react exothermically with water (i.e. releasing heat).

10.6 Hazardous decomposition products

May evolve toxic gases (chlorides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met. Toxicity Data available for the ingredients:
CALCIUM CHLORIDE ANHYDROUS (10043-52-4):

LD50 (Ingestion): 1000 mg/kg (rat)
LD50 (Intraperitoneal): 210 mg/kg (mouse)
LD50 (Intravenous): 42 mg/kg (mouse)
LD50 (Subcutaneous): 823 mg/kg (mouse)
LDLo (Ingestion): 1384 mg/kg (rabbit)
LDLo (Intravenous): 150 mg/kg (guinea pig)
LDLo (Subcutaneous): 249 mg/kg (cat)
TDLo (Intravenous): 20 mg/kg/1 hour (woman)
SODIUM CHLORIDE (7647-14-5):
LC50 (Inhalation): > 42000 mg/m ³ /1 hour (rat)
LD50 (Ingestion): 3000 mg/kg (rat)
LD50 (Intraperitoneal): 2602 mg/kg (mouse)
LD50 (Intravenous): 645 mg/kg (mouse)
LD50 (Skin): > 10000 mg/kg (rabbit)
LD50 (Subcutaneous): 3000 mg/kg (mouse)
LDLo (Ingestion): 8000 mg/kg (rabbit)
LDLo (Intravenous): 300 mg/kg (guinea pig)
LDLo (Subcutaneous): 2160 mg/kg (guinea pig)
TDLo (Ingestion): 12357 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CALCIUM CHLORIDE ANHYDROUS	2301 mg/kg (rat)	> 5000 mg/kg (rabbit)	--
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m ³ /1 hour (rat)

Additional ingredient toxicity values:

SODIUM CHLORIDE (7647-14-5)

LD50 (intraperitoneal)	2602 mg/kg (mouse)
LD50 (intravenous)	645 mg/kg (mouse)
LD50 (subcutaneous)	3000 mg/kg (mouse)
LDLo (intravenous)	300 mg/kg (guinea pig)
LDLo (oral)	8000 mg/kg (rabbit)
LDLo (subcutaneous)	2160 mg/kg (guinea pig)
TDLo (oral)	12357 mg/kg (human)

Skin	Not classified as a skin irritant. Contact may result in mechanical irritation, redness and rash.
Eye	Causes serious eye irritation. Contact may result in irritation, lacrimation, pain and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	Insufficient data available to classify as a carcinogen.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

This product does not bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

PRODUCT NAME CALCIUM CHLORIDE POWDER 94-97%

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

Monoethylene Glycol (MEG)

Issue Date 18-May-2017

Revision date 26-Mar-2024

Version 1.2
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name Monoethylene Glycol (MEG)

Product Code NDF00270

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use hydrate-control additive

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand); 1-800-424-9300 (International Number);

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4 - (H302)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)

Label elements

Exclamation mark
Health hazard

**Signal word**

Warning

Hazard statements

H302 - Harmful if swallowed

H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

Get medical advice/attention if you feel unwell

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

Harmful to aquatic life

General Hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Chemical name	CAS No	Weight-%	REACH registration number
Ethylene glycol	107-21-1	100	01-2119456816-28-XXXX

Section 4: FIRST AID MEASURES**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance.

Emergency telephone number

Poisons Information Center, Australia: 13 11 26

Poisons Information Center, New Zealand: 0800 764 766

Inhalation

Remove to fresh air.

Eye contactRinse 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.

IngestionDo NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person. Call a physician.**Most important symptoms and effects, both acute and delayed**

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical, CO₂, alcohol-resistant foam or water spray.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

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

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Wash contaminated clothing before reuse. Handle in accordance with good industrial

hygiene and safety practice. Wash thoroughly after handling.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

Incompatible materials Strong oxidizing agents Strong acids Strong bases Aldehydes Aluminum

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Australia
Ethylene glycol 107-21-1	10 mg/m ³ 20 ppm 52 mg/m ³ 40 ppm STEL 104 mg/m ³ STEL

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	sweet.
Appearance	liquid	Odor threshold	No information available
Color	colorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		No information available
Melting point / freezing point	-13 °C	
Boiling point / boiling range	196 °C	
Flash point	111 °C	
Evaporation rate	1	
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available

Vapor pressure		No data available
Vapor density		No data available
Relative density	1.11	
Water solubility	Miscible in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature	400 °C	
Hyphen		No information available
Kinematic viscosity		
Dynamic viscosity		
Other information		
Softening point		No information available
Molecular weight		No information available
VOC content		No information available
Liquid Density		No information available
Bulk density		No information available
Particle Size		No information available
Particle Size Distribution		No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizing agents. Strong acids. Strong bases. Aldehydes. Aluminum.

Hazardous decomposition products

Hazardous Decomposition Products Aldehydes. Alcohols.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

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

Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available Harmful if swallowed (based on components)
Symptoms	No information available.

Numerical measures of toxicity - Product Information

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

ATEmix (oral) 500.00 mg/kg

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity
 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene glycol	= 500 mg/kg (Stima puntuale della tossicità acuta convertita)	= 10600 mg/kg (Rat)	> 2.5 mg/L (Rat) 6 h

See section 16 for terms and abbreviations

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

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis).
Aspiration hazard	No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity

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

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethylene glycol	EC50: 6500 - 13000mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 14 - 18mL/L (96h, Oncorhynchus mykiss) LC50: 40000 - 60000mg/L (96h, Pimephales promelas) LC50: =16000mg/L (96h, Poecilia reticulata) LC50: =27540mg/L (96h, Lepomis macrochirus) LC50: =40761mg/L (96h, Oncorhynchus mykiss) LC50: =41000mg/L (96h, Oncorhynchus mykiss)	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	EC50: =46300mg/L (48h, Daphnia magna)

Persistence and degradability

Persistence and degradability Readily biodegradable.

Bioaccumulative potential

Bioaccumulation No information available.

Component Information

Chemical name	Partition coefficient
Ethylene glycol	-1.36

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS**Waste treatment methods**

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not Regulated

IMDG Not Regulated

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

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 18-May-2017

Revision date 26-Mar-2024

Revision Note

No information available.

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

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.**

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name STRATA-VANGUARD
Synonyms STRATA VANGUARD

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	<30%
DIATOMACEOUS EARTH, FLUX CALCINED	68855-54-9	272-489-0	<15%
FULLERS EARTH	8031-18-3	617-052-0	<10%
LIMESTONE (CALCIUM CARBONATE)	1317-65-3	215-279-6	<10%
CRISTOBALITE	14464-46-1	238-455-4	<5%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<2%
MAGNESIUM OXIDE	1309-48-4	215-171-9	<1%
1,3 BUTADIENE/STYRENE COPOLYMERS	9003-55-8	618-370-2	<50%
2-PROPENENITRILE-1,3-BUTADIENE RUBBER	9003-18-3	618-357-1	<50%
NATURAL RUBBER	9006-04-6	232-689-0	<50%
POLYISOPRENE	9003-31-0	618-362-9	<50%
POLYETHYLENE	9002-88-4	618-339-3	<3%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	None allocated.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Calcium carbonate (Limestone, Marble, Whiting)	SWA [AUS]	--	10	--	--
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--
Cristobalite	SWA [AUS]	--	0.1	--	--
Magnesium oxide (fume)	SWA [AUS]	--	10	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.1	--	--
Quartz (respirable dust)	SWA [Proposed]	--	0.05	--	--
Quartz (respirable dust)	WorkSafe VIC	--	0.05	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter or a Full-face Class P3 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TAN COLOURED POWDER
Odour	MILD ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.3 (5% Suspension)
Vapour density	NOT AVAILABLE
Specific gravity	2.1
Solubility (water)	INSOLUBLE
Vapour pressure	1 mm Hg @ 20°C
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid contact with incompatible substances.

10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid). Also incompatible with oxygen difluoride, chlorine and trifluoride.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity Data available for the ingredients:
 CRISTOBALITE (14464-46-1):
 TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)
 QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
 LCLo (inhalation) 300 ug/m³/10 years (human)
 TCLo (inhalation) 16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis)
 CELLULOSE (9004-34-6):
 LC50 (inhalation) > 5800 mg/m³/4 hours (rat)
 LD50 (ingestion) > 5000 mg/kg (rat)
 LD50 (intraperitoneal) > 31600 mg/kg (rat)
 LD50 (skin) > 2000 mg/kg (rabbit)
 POLYETHYLENE (9002-88-4):
 LDLo (ingestion) 3000 mg/kg (rat)
 MAGNESIUM OXIDE (1309-48-4):
 TCLo (inhalation) 400 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m ³ /4 hours (rat)
LIMESTONE (CALCIUM CARBONATE)	> 5000 mg/kg (rat)	--	--

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
 LD50 (intraperitoneal) > 31600 mg/kg (rat)
 CRISTOBALITE (14464-46-1)
 TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)
 POLYETHYLENE (9002-88-4)
 LDLo (oral) 3000 mg/kg (rat)

Skin

Not classified as a skin irritant. Contact may result in mechanical irritation.

Eye

Not classified as an eye irritant. Contact may result in mechanical irritation.

Sensitisation

Not classified as causing skin or respiratory sensitisation.

Mutagenicity

No evidence of mutagenic effects.

Carcinogenicity

Not classified as a carcinogen. Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.

Reproductive

No relevant or reliable studies were identified.

STOT - single exposure

No known effects from this product.

PRODUCT NAME STRATA-VANGUARD

STOT - repeated exposure	Not classified as causing organ damage from repeated exposure. Adverse health effects associated with silica, such as the development of silicosis (lung fibrosis), is not anticipated unless prolonged and repeated exposure to respirable silica quartz dust occurs.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

12.2 Persistence and degradability

Not applicable.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate.

12.4 Mobility in soil

This product has low mobility in soil.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code	None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

PRODUCT NAME STRATA-VANGUARD

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name FRAC ATTACK
Synonyms FRAC-ATTACK

1.2 Uses and uses advised against

Uses LOST CIRCULATION MATERIAL

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Skin Corrosion/Irritation: Category 2
Serious Eye Damage / Eye Irritation: Category 1
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Prevention statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

PRODUCT NAME FRAC ATTACK

Response statements

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove 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.
P321	Specific treatment is advised - see first aid instructions.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before re-use.

Storage statements

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

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	<30%
DIATOMACEOUS EARTH	61790-53-2	612-383-7	<15%
FULLERS EARTH	8031-18-3	617-052-0	<12%
CALCIUM OXIDE	1305-78-8	215-138-9	<10%
CALCIUM HYDROXIDE	1305-62-0	215-137-3	<5%
CRISTOBALITE	14464-46-1	238-455-4	<5%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<3%
MAGNESIUM OXIDE	1309-48-4	215-171-9	<2%
1,3 BUTADIENE/STYRENE COPOLYMERS	9003-55-8	618-370-2	<50%
2-PROPENENITRILE-1,3-BUTADIENE RUBBER	9003-18-3	618-357-1	<50%
NATURAL RUBBER	9006-04-6	232-689-0	<50%
POLYISOPRENE	9003-31-0	618-362-9	<50%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes and skin.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

PRODUCT NAME FRAC ATTACK

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Calcium hydroxide	SWA [AUS]	--	5	--	--
Calcium hydroxide	SWA [Proposed]	--	1	--	--
Calcium oxide	SWA [AUS]	--	2	--	--
Calcium oxide	SWA [Proposed]	--	1	--	--
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--
Cristobalite	SWA [AUS]	--	0.1	--	--
Diatomaceous earth (uncalcined) (a)	SWA [AUS]	--	10	--	--
Magnesium oxide (fume)	SWA [AUS]	--	10	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.1	--	--
Quartz (respirable dust)	SWA [Proposed]	--	0.05	--	--
Quartz (respirable dust)	WorkSafe VIC	--	0.05	--	--

PRODUCT NAME FRAC ATTACK

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BROWN/GREY POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT RELEVANT
Melting point	NOT AVAILABLE
Evaporation rate	NON VOLATILE
pH	ALKALINE
Vapour density	NOT AVAILABLE
Specific gravity	2.10
Solubility (water)	NEGLIGIBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	NOT RELEVANT

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

PRODUCT NAME FRAC ATTACK

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve Fluorine, Oxygen Difluoride, Chlorine, Trifluoride and Hydrofluoric Acid when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity Data available for the ingredients:
CALCIUM HYDROXIDE (1305-62-0):
LD50 (ingestion): 7300 mg/kg (mouse)
CRISTOBALITE (14464-46-1):
TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)
QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
LCLo (inhalation): 300 ug/m³/10 years (human)
TCLo (inhalation): 16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis)
CELLULOSE (9004-34-6):
LC50 (inhalation) > 5800 mg/m³/4 hours (rat)
LD50 (ingestion) > 5000 mg/kg (rat)
LD50 (intraperitoneal) > 31600 mg/kg (rat)
LD50 (skin) > 2000 mg/kg (rabbit)
MAGNESIUM OXIDE (1309-48-4):
TCLo (inhalation): 400 mg/kg (human)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m ³ /4 hours (rat)
DIATOMACEOUS EARTH	> 5000 mg/kg (rat)	> 5000 mg/kg (rabbit)	--
CALCIUM HYDROXIDE	7300 mg/kg (mouse)	--	--

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
LD50 (intraperitoneal) > 31600 mg/kg (rat)
CRISTOBALITE (14464-46-1)
TCLo (inhalation) 16 mppcf/8hours/17.9 years (human-fibrosis)

Skin	Irritating to the skin. Contact may result in irritation, redness, pain, rash, dermatitis and possible skin burns.
Eye	Irritating to the eyes. Contact may result in irritation, lacrimation, pain, redness, conjunctivitis and possible burns.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Irritating to the respiratory system. Over exposure may result in irritation of the nose and throat, with coughing.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure. Repeated exposure to crystalline silica may cause lung fibrosis (silicosis), however due to the low levels of respirable crystalline silica in this product, adverse health effects are not anticipated with normal use.
Aspiration	Not classified as causing aspiration. Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The manufacturer reports that this product is harmful to aquatic life.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name DEFOAM AP 400
Synonyms DEFOAMER

1.2 Uses and uses advised against

Uses TREATMENT OF FOAMING IN DRILLING FLUIDS

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POLYETHYLENE GLYCOL	25322-68-3	500-038-2	45 to 60%
OCTAN-2-OL	123-96-6	204-667-0	40 to 55%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR COLOURLESS LIQUID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	100°C to 102°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Specific gravity	1.00 to 1.17
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Freezing point	-7°C to 0°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POLYETHYLENE GLYCOL	> 15,000 mg/kg (rat)	> 20,000 mg/kg (rabbit)	--
OCTAN-2-OL	--	2000 mg/kg (rat)	--

Skin Not classified as a skin irritant. Contact may cause temporary mild skin irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name DSCO DEFOAM
Synonyms 1093242, 1016819 - MATERIAL NUMBER

1.2 Uses and uses advised against

Uses DEFOAMER • DEFOAMING AGENT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website <http://www.newpark.com>

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POLYPROPYLENE GLYCOL	25322-69-4	500-039-8	>60%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR TO LIGHT AMBER LIQUID
Odour	SLIGHT ODOUR
Flammability	CLASS C2 COMBUSTIBLE
Flash point	185°C
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	1.00
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects

PRODUCT NAME DSCO DEFOAM

are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POLYPROPYLENE GLYCOL	300 - 57000 mg/kg (range)	--	--

Skin	Not classified as a skin irritant. Contact may cause temporary mild skin irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt. NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

PRODUCT NAME DSCO DEFOAM

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SAPP
Synonyms DISODIUM DIHYDROGEN PYROPHOSPHATE • DISODIUM PYROPHOSPHATE

1.2 Uses and uses advised against

Uses ACIDIFIER • BUFFERING AGENT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
DISODIUM PYROPHOSPHATE	7758-16-9	231-835-0	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (phosphorus oxides) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Nuisance dust	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	> 600°C
Evaporation rate	NOT AVAILABLE
pH	4 - 5 (10% Solution)
Vapour density	NOT AVAILABLE
Specific gravity	1.35 - 1.41
Solubility (water)	119 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (phosphorus oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Low toxicity. Ingestion of large quantities may result in nausea, vomiting and gastrointestinal irritation.

PRODUCT NAME SAPP

Ingestion of large quantities may also result in serious disturbances in calcium metabolism.

LD50 (Ingestion): 2650 mg/kg (mouse)
LD50 (Intraperitoneal): 1 g/kg (mouse)
LD50 (Intravenous): 59 mg/kg (mouse)
LD50 (Subcutaneous): 480 mg/kg (mouse)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
DISODIUM PYROPHOSPHATE	2650 mg/kg (mouse)	> 2000 mg/kg (rat)	> 0.58 mg/L/4hrs (rat)

Additional ingredient toxicity values:

DISODIUM PYROPHOSPHATE (7758-16-9)
LD50 (intraperitoneal) 1 g/kg (mouse)
LD50 (intravenous) 59 mg/kg (mouse)
LD50 (subcutaneous) 480 mg/kg (mouse)

Skin	Low to moderate irritant. Prolonged or repeated contact may result in irritation and rash.
Eye	Low to moderate irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Low irritant. Over exposure may result in irritation of the nose and throat, with coughing.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SAND SEAL FINE
Synonyms SAND SEAL

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
VEGETABLE MATERIALS	-	-	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TAN POWDER
Odour	MILD ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.3 (5% Suspension)
Vapour density	NOT AVAILABLE
Specific gravity	0.35
Solubility (water)	INSOLUBLE
Vapour pressure	1 mm Hg @ 20°C
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects

PRODUCT NAME SAND SEAL FINE

	are not anticipated.
Skin	Not classified as a skin irritant. Contact may result in mild irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH American Conference of Governmental Industrial Hygienists CAS # Chemical Abstract Service number - used to uniquely identify chemical compounds CNS Central Nervous System EC No. EC No - European Community Number EMS Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) GHS Globally Harmonized System GTEPG Group Text Emergency Procedure Guide IARC International Agency for Research on Cancer LC50 Lethal Concentration, 50% / Median Lethal Concentration LD50 Lethal Dose, 50% / Median Lethal Dose mg/m³ Milligrams per Cubic Metre OEL Occupational Exposure Limit pH relates to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline). ppm Parts Per Million STEL Short-Term Exposure Limit STOT-RE Specific target organ toxicity (repeated exposure) STOT-SE Specific target organ toxicity (single exposure) SUSMP Standard for the Uniform Scheduling of Medicines and Poisons SWA Safe Work Australia TLV Threshold Limit Value TWA Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name FLEXFIRM
Synonyms FLEXFIRM KA • POTASSIUM SILICATE POWDER

1.2 Uses and uses advised against

Uses DRILLING AID

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Skin Corrosion/Irritation: Category 2
Serious Eye Damage / Eye Irritation: Category 2A
Specific Target Organ Toxicity (Single Exposure): Category 3 (Respiratory Irritation)
Specific Target Organ Toxicity (Repeated Exposure): Category 2

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

PRODUCT NAME FLEXFIRM**Prevention statements**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove 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.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment is advised - see first aid instructions.
P330	Rinse mouth.
P332 + P337 + P313	If skin or eye irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before re-use.

Storage statements

P403 + P232	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
POTASSIUM SILICATE	1312-76-1	215-199-1	99%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	0.1 to 1%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes and skin.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust)	WorkSafe VIC	--	0.05	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	11.3 (50 % solution) (Approximately)
Vapour density	NOT AVAILABLE
Specific gravity	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

PRODUCT NAME FLEXFIRM**Acute toxicity** Harmful if swallowed.**Information available for the ingredients:**

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
POTASSIUM SILICATE	1600 mg/kg (rat)	--	--

Skin	Contact may result in irritation, redness, rash and dermatitis.
Eye	Contact may result in irritation, lacrimation, pain and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.
STOT - repeated exposure	Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The high pH when undiluted or unneutralized is acutely harmful to aquatic life. The following data is reported for chemically similar Sodium Silicates on a 100% solids basis: A 96 hour median tolerance for fish (*Gambusia affinis*) of 2320 ppm; a 96 hour median tolerance for water fleas (*Daphnia magna*) of 247 ppm; a 96 hour median tolerance for snail eggs (*Lymnaea*) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm.

12.2 Persistence and degradability

This material is not persistent in aquatic systems.

12.3 Bioaccumulative potential

Neither silica nor potassium will appreciably bio-concentrate up the food chain.

12.4 Mobility in soil

Expected to be mobile in soil. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SPA
Synonyms SODIUM POLYACRYLATE

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ACRYLATE - ACRYLAMIDE COPOLYMER(S)	-	-	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition. As with many solids, any dust that is generated may be explosive if mixed with air in critical proportions and in the presence of a source of ignition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Acrylamide	SWA [AUS]	--	0.03	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CREAM GRANULAR SOLID
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	0.8
Solubility (water)	10 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	5 - 10 %

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low toxicity. Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation, rash and dermatitis.
Eye	Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	Insufficient data available to classify as a carcinogen. This product may contain trace amounts of residual acrylamide, which is classified as a probable human carcinogen (IARC Group 2A). However, due to the very low levels present, adverse health effects are not anticipated with normal use.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

(10000 ppm test concentration) (EPA-821-R-02-012) Mysidopsis Bahia = 48HR LC50 = 16.2 mg/L. Menidia Beryllina = 48hr LC50 = 34.2 mg/L. Scophthalmus Maximus = 96hr LC50 > 1000 mg/L. Skeletonemia Costatum = 72hr EC50 = 393 mg/L [NOEC = 118 mg/L] Acartia Tonsa = 48hr EC50 = 393 mg/L [NOEC = 112 mg/L] Corophium Volutator = 10 day LC50 = 9338 mg/Kg [NOEC = 1000 mg/Kg]

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	ACRYLIC - ACRYLAMIDE RESINS: These resins are generally of low toxicity. Toxicity increases with presence of significant concentrations of acrylic - acrylamide monomers. These monomers have been linked with the development of skin sensitisation. RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary. PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **FRACSEAL FINE/MEDIUM**
Synonyms FRACSEAL F • FRACSEAL FINE • FRACSEAL M • FRACSEAL MEDIUM

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website <http://www.newpark.com>

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin Exposure is considered unlikely. Skin irritation is not anticipated.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities Normal washroom facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

This product is expected to be of low toxicity. Under normal conditions of use, adverse health effects are not anticipated.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for damage to containers.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face When using large quantities or where heavy contamination is likely, wear dust-proof goggles.
Hands Wear PVC or rubber gloves.
Body When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	ODOURLESS
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	500°C to 518°C
Evaporation rate	NOT AVAILABLE
pH	6.5 to 7.5
Vapour density	NOT AVAILABLE
Relative density	0.9
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
 Oral LD50 (rat) is > 5000 mg/kg.
 Dermal LD50 (rabbit) is > 2000 mg/kg.
 LC50 (rat) is 510 mg/m³/2 hours.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m ³ /4 hours (rat)

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
 LD50 (intraperitoneal) > 31600 mg/kg (rat)

Skin Not classified as a skin irritant.
Eye Not classified as an eye irritant. Contact may cause mild discomfort.
Sensitisation Not classified as causing skin or respiratory sensitisation.
Mutagenicity No evidence of mutagenic effects.
Carcinogenicity No evidence of carcinogenic effects.
Reproductive No relevant or reliable studies were identified.
STOT - single exposure Not classified as causing organ damage from single exposure.
STOT - repeated exposure Not classified as causing organ damage from repeated exposure.
Aspiration Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse where possible. No special precautions are normally required when handling this product.
Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

PRODUCT NAME FRACSEAL FINE/MEDIUM

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME FRACSEAL FINE/MEDIUM**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **QUICKSEAL (F,M,C)**
Synonyms **QUICKSEAL**

1.2 Uses and uses advised against

Uses **DRILLING FLUID ADDITIVE**

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CELLULOSE	9004-34-6	232-674-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition. Dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Difficult to extinguish once burning.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are labelled, protected from light, freezing or physical damage and tightly sealed when not in use. Keep out of reach of children.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Cellulose (paper fibre) (a)	SWA [AUS]	--	10	--	--

Biological limits No Biological Limit Value allocated.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW TO BROWN SOLID
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT RELEVANT
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 8
Vapour density	NOT AVAILABLE
Specific gravity	0.9 - 1.2
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with calcium oxides, bleaching powder, perchlorates, perchloric acid, sodium chlorate, fluorine, nitric acid, sodium nitrate and sodium nitrite.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

PRODUCT NAME QUICKSEAL (F,M,C)

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Acute Oral Toxicity: LD50 (oral) > 5000 mg/kg (rats).
Acute Dermal Toxicity: LD50 (dermal) > 2000 mg/kg (rats).
Acute Inhalation Toxicity: LC50 (Inhalation) = 5800 mg/m³/4hrs (rat).

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
CELLULOSE	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5800 mg/m ³ /4 hours (rat)

Additional ingredient toxicity values:

CELLULOSE (9004-34-6)
LD50 (intraperitoneal) > 31600 mg/kg (rat)

Skin Not classified as a skin irritant. Contact may result in mechanical irritation, redness and rash.
Eye Not classified as an eye irritant. However, this product may cause mechanical eye irritation with redness and lacrimation.
Sensitisation Not classified as causing skin or respiratory sensitisation.
Mutagenicity No evidence of mutagenic effects.
Carcinogenicity No evidence of carcinogenic effects.
Reproductive No relevant or reliable studies were identified.
STOT - single exposure Not classified as causing organ damage from single exposure.
STOT - repeated exposure Not classified as causing organ damage from repeated exposure.
Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Low toxicity to aquatic organisms.

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Reuse where possible. No special precautions are normally required when handling this product.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

PRODUCT NAME QUICKSEAL (F,M,C)

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME QUICKSEAL (F,M,C)**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name AVAGREEN LUBE
Synonyms AVA GREEN LUBE • GREEN LUBE

1.2 Uses and uses advised against

Uses DRILLING FLUID • LUBRICANT

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
METHYL ESTERS OF FATTY ACIDS	68990-52-3	273-606-8	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW LIQUID
Odour	SWEET VEGETABLE ODOUR
Flammability	CLASS C2 COMBUSTIBLE
Flash point	180°C
Boiling point	> 300°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	0.91 to 0.92
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	260°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Skin	Not classified as a skin irritant. Contact may cause temporary mild skin irritation.
Eye	Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50 (Fish) 48 h: > 10000 µg / L

LC50 (Mollusc) 48 h: > 10000 µg /L

LC50 (Amphibious) 48 h: > 7600 µg/L

12.2 Persistence and degradability

70% 28 days (method OECD 301 B)

12.3 Bioaccumulative potential

Low potential for bioaccumulation.

12.4 Mobility in soil

It is not volatile and not expected to persist in the environment.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name ZINC OXIDE
Synonyms ZINC WHITE

1.2 Uses and uses advised against

Uses SCAVENGER

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Aquatic Toxicity (Chronic): Category 1

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H410 Very toxic to aquatic life with long lasting effects.

Prevention statements

P273 Avoid release to the environment.

Response statements

P391 Collect spillage.

Storage statements

None allocated.

PRODUCT NAME ZINC OXIDE**Disposal statements**

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ZINC OXIDE	1314-13-2	215-222-5	>99%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve zinc oxides when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

5.4 Hazchem code

2Z

2 Fine Water Spray.

Z Wear full fire kit and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Zinc oxide (dust)	SWA [AUS]	--	10	--	--
Zinc oxide (fume)	SWA [AUS]	--	5	--	10

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE TO YELLOW-WHITE POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	1975°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT AVAILABLE
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE

PRODUCT NAME ZINC OXIDE

9.1 Information on basic physical and chemical properties

Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with metals if heated and with acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve zinc oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low toxicity. Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ZINC OXIDE	7950 mg/kg (mouse)	--	2500 mg/m ³ (mouse)

Additional ingredient toxicity values:

ZINC OXIDE (1314-13-2)	
LD50 (intraperitoneal)	240 mg/kg (rat)
LDLo (oral)	500 mg/kg (human)
TCLo (inhalation)	600 mg/m ³ (human)

Skin	Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation.
Eye	Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	Insufficient data available to classify as a carcinogen.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure. Inhalation of freshly formed zinc oxide fumes may result in the development of a flu-like illness termed metal fume fever.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

This product is not readily biodegradable.

PRODUCT NAME ZINC OXIDE**12.3 Bioaccumulative potential**

All living organisms have homeostasis mechanisms that actively regulate zinc uptake and absorption/excretion from the body; due to this regulation, zinc and zinc compounds do not bioaccumulate or biomagnify.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	3077	3077	3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
14.3 Transport hazard class	9	9	9
14.4 Packing Group	III	III	III

14.5 Environmental hazards

Marine Pollutant

14.6 Special precautions for user

Hazchem code 2Z
GTEPG 9C1
EmS F-A, S-F

Other information The environmentally hazardous substance mark is not required when transported in packages of less than 5 kg/L (UN Model Regulations: Special Provision 375; IATA: Special Provision A197; IMDG: Special Provision 969) or less than 500 kg/L by Australian Road and Rail.

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

VICTOSAL HT

A safety data sheet is not required for this product under Article 31 of REACH

Issuing Date 24-Feb-2017

Revision date 15-Aug-2023

Version 2.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code NDF00243

Product Name VICTOSAL HT

Pure substance/mixture Substance

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Fluid loss control additive

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier

Newpark Drilling Fluids S.r.l.

Via Salaria 1313/C

00138 ROMA (Italy)

For further information, please contact

Contact Point Telephone: + 39 06 8856111

Fax: +39 06 8889363

Website: www.newpark.com

E-mail address hse-hqit@newpark.com

1.4. Emergency telephone number

Emergency Telephone - §45 - (EC)1272/2008	
Europe	112
Croatia	+385 1 7776 920 ; +385 01 2348 342 (Centar za kontrolu otrovanja, 24 sata)
Cyprus	1401
France	+(33)-975181407
Germany	0800-181-7059; +(49)- 69643508409
Hungary	+(36)-18088425
Italy	800-789-767; +(39)-0245557031 Milano 24/24 Ospedale Niguarda Ca'grande Piazza ospedale maggiore 3 +39 0266101029 Roma 24/24 Policlinico Gemelli Largo Agostino Gemelli 8 +39 063054343
Netherlands	+(31)-858880596

Romania	+40213183606, Institutul Național de Sănătate Publică (L-V între 08.00-15.00)
Spain	900-868538; +(34)-931768545
Switzerland	145, (+41) 435082011
United Kingdom	+(44)-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

Hazard statements

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.3. Other hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.1 Substances

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

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

No information available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	In the case of skin irritation or allergic reactions see a physician. Wash skin with soap and water.
Ingestion	Rinse mouth.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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

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

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon oxides.

5.3. Advice for firefighters

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

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

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

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

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510) Storage class 13

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

Exposure Limits 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.

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls No information available.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166, designed to protect against powders and dusts.

Skin and body protection Long sleeved clothing. (EN 340).

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. (EN 136, EN 140, EN 141, EN 143, EN 149, EN 405).

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state Solid
Appearance Powder
Color Off-white
Odor Slight.
Odor threshold No information available

Property	Values	Remarks • Method
Melting point / freezing point		No information available

Boiling point / boiling range		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		
Lower flammability limit:		
Flash point		Not applicable
Autoignition temperature		No information available
Decomposition temperature		No information available
pH	9.0 - 11.4	
pH (as aqueous solution)		No information available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Vapor pressure		No information available
Relative density	0.8	
Bulk density		
Liquid Density		
Vapor density		No information available
Particle characteristics		No information available
Particle Size		
Particle Size Distribution		

9.2. Other information

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Not reactive under normal conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating and toxic gases and vapors.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**Information on likely routes of exposure****Product Information**

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

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	No information available.

Numerical measures of toxicity

No information available

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

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	Not applicable.

11.2. Information on other hazards**11.2.1. Endocrine disrupting properties**

Endocrine disrupting properties	No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Ecotoxicity The environmental impact of this product has not been fully investigated.

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

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

Contaminated packaging Do not reuse empty containers.

Waste codes / waste designations according to EWC / AVV Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	
Special Provisions	None

IMDG

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	
Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN/ID no	Not Regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	
Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 Proper shipping name	Not Regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	
Special Provisions	None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Germany**

Water hazard class (WGK) slightly hazardous to water (WGK 1)

Italy

-D. LGs. 81/2008 (single text on the protection of health and safety in the workplace) and subsequent amendments and Directive 2009/161/EU-assessment of chemical risk under title IX
 -Legislative Decree 3 April 2006, no 152 (environmental standards)
 -"Seveso III Directive" – Legislative Decree of 26 June 2015, n° 105 (Implementation of the Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/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**AICS** - Australian Inventory of Chemical Substances**15.2. Chemical safety assessment****Chemical Safety Report**

A Chemical Safety Assessment is not required for this substance

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend**

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method

Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

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

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AELG(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Issuing Date 24-Feb-2017

Revision date 15-Aug-2023

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)**Disclaimer**

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE. According to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, as amended by Regulation (EC) No. 2020/878.

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name VICTOSAL NS
Synonyms NEWPARK VICTOSAL NS

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE • FILTRATE REDUCER • VISCOSIFIER

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
STARCH	9005-25-8	232-679-6	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation Due to product form / nature of use, an inhalation hazard is not anticipated.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Starch (a)	SWA [AUS]	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls No special precautions are normally required when handling this product. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	When using large quantities or where heavy contamination is likely, wear dust-proof goggles.
Hands	When using large quantities or where heavy contamination is likely, wear PVC or rubber gloves.
Body	Not required under normal conditions of use.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	ODOURLESS
Flammability	COMBUSTIBLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	0.55
Solubility (water)	150 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Bulk density	550 - 700 kg/m3

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites).

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.
Skin	Not classified as a skin irritant. Contact may result in mild irritation.
Eye	Not classified as an eye irritant. Contact may cause mild irritation and lacrimation.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic effects.
Reproductive	No relevant or reliable studies were identified.
STOT - single exposure	No known effects from this product.
STOT - repeated exposure	No known effects from this product.
Aspiration	Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	No special precautions are required for the disposal of this product.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code	None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME VICTOSAL NS**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SALT

Synonyms BUTCHERS SALT • FLOSSY SALT • HALITE • NACL • SODIUM CHLORIDE

1.2 Uses and uses advised against

Uses CHLORIDE SOURCE • DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD

Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

Telephone +61 8 9410 8200

Fax +61 8 9410 8299

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM CHLORIDE	7647-14-5	231-598-3	>98%
INORGANIC SALT(S)	-	-	<0.8%
WATER	7732-18-5	231-791-2	<0.8%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

PRODUCT NAME SALT

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Under normal conditions of use, adverse health effects are not anticipated. This product is generally considered to be of low toxicity.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate fire protection systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	TRANSLUCENT TO WHITE GRANULES OR POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	1413°C
Melting point	801°C
Evaporation rate	NOT AVAILABLE
pH	7 (1 % Solution)
Vapour density	NOT AVAILABLE
Relative density	2.163
Solubility (water)	357 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed in large quantities. Repeated ingestion of excessive amounts of sodium chloride may cause disturbance of body electrolyte and fluid balance.
 LC50 (Inhalation): > 42000 mg/m³/1 hour (rat)
 LD50 (Ingestion): 3000 mg/kg (rat)
 LD50 (Skin): > 10000 mg/kg (rabbit)

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM CHLORIDE	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m ³ /1 hour (rat)

Additional ingredient toxicity values:

SODIUM CHLORIDE (7647-14-5)

LD50 (intraperitoneal)	2602 mg/kg (mouse)
LD50 (intravenous)	645 mg/kg (mouse)
LD50 (subcutaneous)	3000 mg/kg (mouse)
LDLo (intravenous)	300 mg/kg (guinea pig)
LDLo (oral)	8000 mg/kg (rabbit)
LDLo (subcutaneous)	2160 mg/kg (guinea pig)
TDLo (oral)	12357 mg/kg (human)

Skin Contact may result in mild irritation and rash.
Eye Contact may cause discomfort, lacrimation and redness.
Sensitisation Not classified as causing skin or respiratory sensitisation.
Mutagenicity No evidence of mutagenic effects.
Carcinogenicity No evidence of carcinogenic effects.
Reproductive No relevant or reliable studies were identified.
STOT - single exposure Not classified as causing organ damage from single exposure.
STOT - repeated exposure Not classified as causing organ damage from repeated exposure.
Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: LC50 (water flea) is 2122 mg/L/48 hours; LC50 (fathead minnow) is 6.57 g/L/96 hours.

12.2 Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information	PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

Issue Date 30-Dec-2021

Revision Date 30-Dec-2021

Version 1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name NDFT 530

Product Code NDF00865

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended Use Fluid loss control additive

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification**General Hazards**

No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	-	100

Section 4: FIRST AID MEASURES**Description of first aid measures**

Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

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

Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Special protective actions for fire-fighters

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

Hazchem code	Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED**Precautions for safe handling**

Advice on safe handling	Ensure adequate ventilation, especially in confined areas.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**Control parameters**

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

Biological occupational exposure limits	Not applicable

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Powder	Odor	No information available.
Appearance	Powder	Odor threshold	No information available
Color	Off-white to light yellow		

Property	Values	Remarks • Method
pH		No information available
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density		No information available
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		
Dynamic viscosity		

Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity	No information available.

Chemical stability

Stability	Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.

Conditions to avoid

Conditions to avoid	None known based on information supplied.

Incompatible materials

Incompatible materials None known based on information supplied.

Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure****Product Information**

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

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

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

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

Symptoms No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity

100 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

See section 16 for terms and abbreviations

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

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

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

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not Regulated

IATA Not Regulated

IMDG Not Regulated

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

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Does not comply
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/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

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 30-Dec-2021

Revision Date 30-Dec-2021

Revision Note

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all

individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name GEOVIS
Synonyms DIUTAN GUM

1.2 Uses and uses advised against

Uses VISCOSITY MODIFIER

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
D-GLUCURONO-6-DEOXY-L-MANNO-D-GLUCAN, ACETATE, CALCIUM MAGNESIUM POTASSIUM SODIUM SALT	595585-15-2	-	>50%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities None allocated.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE TO TAN POWDER
Odour	SLIGHT ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NON VOLATILE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT AVAILABLE
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	351°C
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	0 %

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
D-GLUCURONO-6-DEOXY-L-MANNO-D-GLUCAN, ACETATE, CALCIUM MAGNESIUM POTASSIUM SODIUM SALT	> 5000 mg/kg (rat)	--	--

Skin Not classified as a skin irritant. Contact may result in mild irritation. The hydrophilic nature of the notified polymer in powder form can contribute to mechanical irritation and collection in the eyes when dust is generated.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness. The hydrophilic nature of the notified polymer in powder form can contribute to mechanical irritation and collection on the skin when dust is generated.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure. The hydrophilic nature of the notified polymer in powder form can contribute to mechanical irritation and collection in the airways when dust is generated.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The notified polymer is not toxic to fish (rainbow trout), aquatic invertebrates (daphnia magna) and marine invertebrates (acartia tonsa) under test conditions.

12.2 Persistence and degradability

Considered readily biodegradable.

12.3 Bioaccumulative potential

No experimental results provided. However, based on the molecular weight, water solubility and Kow value the notified polymer is not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name MICROFLOW
Synonyms MICRO FLOW

1.2 Uses and uses advised against

Uses DRILLING FLUID ADDITIVE

1.3 Details of the supplier of the product

Supplier name NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD
Address 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA
Telephone +61 8 9410 8200
Fax +61 8 9410 8299
Website www.newpark.com

1.4 Emergency telephone numbers

Emergency 1800 127 406 (Australia); +64 4 917 9888 (International)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Flammable Liquids: Category 3

Health Hazards

Skin Sensitisation: Category 1B
Serious Eye Damage / Eye Irritation: Category 2A
Specific Target Organ Toxicity (Single Exposure): Category 3 (Narcotic Effects)

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H226 Flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

PRODUCT NAME MICROFLOW

Prevention statements

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash 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/protective clothing/eye protection/face protection.

Response statements

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 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.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment is advised - see first aid instructions.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use appropriate media for extinction.

Storage statements

P403 + P233 + P235	Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	Store locked up.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SWEET ORANGE OIL	68647-72-3	614-678-6	20 to 60%
ISOPROPYL ALCOHOL	67-63-0	200-661-7	15 to 50%

Ingredient Notes Terpenes (Sweet Orange Oil) may appear as CAS# 94266-47-4.

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes. Vapours may cause drowsiness and dizziness.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

PRODUCT NAME MICROFLOW

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones, etc when handling. Earth containers when dispensing fluids.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

- 3Y
- 3 Alcohol Resistant Foam is the preferred firefighting medium but, if it is not available, normal foam can be used.
- Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should be banded and have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Isopropyl alcohol	SWA [AUS]	400	983	500	1230

Biological limits

Ingredient	Determinant	Sampling Time	BEI
ISOPROPYL ALCOHOL	Acetone in urine	End of shift at end of workweek	40 mg/L

Reference: ACGIH Biological Exposure Indices

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear nitrile or neoprene gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. If spraying, wear a Type A-Class P1 (Organic gases/vapours and Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	CLEAR TO OPAQUE MILKY WHITE LIQUID
Odour	CITRUS ODOUR
Flammability	FLAMMABLE
Flash point	25°C
Boiling point	154.4°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	0.917 - 0.977
Solubility (water)	SOLUBLE
Vapour pressure	18 mm Hg @ 20°C
Upper explosion limit	6.1 %
Lower explosion limit	0.7 %
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	55 - 75 %

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), metals, heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity May be harmful if swallowed. Oral Toxicity: An oral LD50 in mice of 3600 mg/kg has been reported for isopropanol.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ISOPROPYL ALCOHOL	> 2000 mg/kg (rat) (NICNAS)	> 2000 mg/kg (rat) (NICNAS)	> 20 mg/L (rat) (NICNAS)

Skin Not classified as a skin irritant. Prolonged or repeated contact may result in irritation, rash and dermatitis.

Eye Causes serious eye irritation. Contact may result in irritation, lacrimation, pain and redness.

Sensitisation May cause an allergic skin reaction. This product is not classified as a respiratory sensitiser.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Isopropyl alcohol is not classifiable as to its carcinogenicity to humans (IARC Group 3).

Reproductive Not classified as a reproductive toxin. Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, coughing and headache. High level exposure may result in nausea, dizziness and drowsiness.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure. However, repeated exposure to some solvents have been reported to cause adverse effects to the central nervous system (CNS), liver and kidney.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Not expected to be dangerous to the aquatic environment.

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate.

12.4 Mobility in soil

Relatively volatile and would therefore readily evaporate from dry soil and surfaces.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required). Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1993	1993	1993
14.2 Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Contains isopropyl alcohol)	FLAMMABLE LIQUID, N.O.S. (Contains isopropyl alcohol)	FLAMMABLE LIQUID, N.O.S. (Contains isopropyl alcohol)
14.3 Transport hazard class	3	3	3
14.4 Packing Group	III	III	III

14.5 Environmental hazards

Not a Marine Pollutant

14.6 Special precautions for user

Hazchem code ●3Y
 GTEPG 3A1
 EmS F-E, S-E

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
 All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
 The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
 It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

Issue Date 28-Sep-2016

Revision Date 04-Jan-2018

Version 2
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product identifier

Product Name INCORR

Product Code NDF00204

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use Corrosion inhibitor

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number 1800 127 406 (Australia); +64 4 917 9888 (International)

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Serious eye damage/eye irritation	Category 2 - (H319)

Label elements



Signal word

Warning

Hazard statements

H319 - Causes serious eye irritation

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/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**General Hazards**

No information available

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Not applicable

Mixture

Chemical Name	CAS No	Weight-%
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues	68909-77-3	10-30
Poly(oxy-1,2-ethanediyl), alpha-hydro-omega-hydroxy-, mono(2-(4,5-dihydro-2-nortall-oil alkyl-1H-imidazol-1-yl)ethyl) ethers	68909-09-1	5-10
Acetic acid	64-19-7	1-5
Non-hazardous ingredients	Proprietary	Balance

Section 4: FIRST AID MEASURES**Description of first aid measures****Emergency telephone number**

Poisons Information Center, Australia: 13 11 26

Poisons Information Center, New Zealand: 0800 764 766

Inhalation

Remove to fresh air.

Eye contact

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

Skin contact

Wash skin with soap and water.

Ingestion

Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed**Symptoms**

No information available.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Suitable extinguishing media

Carbon dioxide (CO₂). Water spray (fog).

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NO_x).

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials Strong oxidizing agents

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical Name	Australia
Acetic acid 64-19-7	10 ppm 25 mg/m ³ 15 ppm STEL 37 mg/m ³ STEL

Biological occupational exposure limits

Not applicable

Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Slight.
Appearance	liquid	Odor threshold	No information available
Color	No information available		

Property	Values	Remarks • Method
pH	7 - 9	
Melting point / freezing point		No information available
Boiling point / boiling range	100 °C	
Flash point	> 100 °C	
Evaporation rate		No information available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	0.95-1.05	
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		
Dynamic viscosity		

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong oxidizing agents.

Hazardous Decomposition Products

Hazardous Decomposition Products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information

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

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

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

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

Symptoms No information available.

Numerical measures of toxicity - Product Information

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

ATEmix (oral) 7,023.00 mg/kg

ATEmix (dermal) 26,500.00 mg/kg
 ATEmix (inhalation-dust/mist) 285.00 mg/l

Unknown acute toxicity 28 % of the mixture consists of ingredient(s) of unknown toxicity
 5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 25 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 28 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 28 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 25 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues	= 1500 mg/kg (Rat)	-	-
Acetic acid	= 3310 mg/kg (Rat)	= 1060 mg/kg (Rabbit)	= 11.4 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 Irritating to skin.
Serious eye damage/eye irritation Risk of serious damage to eyes.
Respiratory or skin sensitization May cause an allergic skin reaction.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity 5 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Acetic acid	-	75: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 79: 96 h <i>Pimephales promelas</i> mg/L LC50 static	EC50 = 8.8 mg/L 15 min EC50 = 8.8 mg/L 25 min EC50 = 8.8 mg/L 5 min	47: 24 h <i>Daphnia magna</i> mg/L EC50 65: 48 h <i>Daphnia magna</i> mg/L EC50 Static

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation .

Component Information

Chemical Name	Partition coefficient
Acetic acid	-0.31

Mobility

Mobility in soil No information available.

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

ADG Not regulated

IATA Not regulated

IMDG Not regulated

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

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies

ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply
NZIoC	Does not comply

Legend:

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

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations**Ozone-depleting substances (ODS)** Not applicable**Persistent Organic Pollutants** Not applicable**Export Notification requirements** Not applicable**Section 16: ANY OTHER RELEVANT INFORMATION****Issue Date** 28-Sep-2016**Revision Date** 04-Jan-2018**Revision Note**

No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **POLYDRILL**

Synonyms **POLY DRILL**

1.2 Uses and uses advised against

Uses **ADDITIVE • DRILLING FLUID ADDITIVE**

1.3 Details of the supplier of the product

Supplier name **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

Address **11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA**

Telephone **+61 8 9410 8200**

Fax **+61 8 9410 8299**

Website www.newpark.com

1.4 Emergency telephone numbers

Emergency **1800 127 406 (Australia); +64 4 917 9888 (International)**

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SULPHONATED ORGANIC POLYMER	-	-	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	RED BROWN POWDER
Odour	CHARACTERISTIC ODOUR
Flammability	COMBUSTIBLE
Flash point	NOT RELEVANT
Boiling point	> 370°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	7 to 9 (150 g/L)
Vapour density	NOT AVAILABLE
Specific gravity	1.8
Solubility (water)	320 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
SULPHONATED ORGANIC POLYMER	> 5000 mg/kg (rat)	--	--

Skin Not classified as a skin irritant. Contact may result in mild irritation.

Eye Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity No evidence of carcinogenic effects.

Reproductive No relevant or reliable studies were identified.

STOT - single exposure Not classified as causing organ damage from single exposure.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

This product is not readily biodegradable.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory listings	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report status This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

Issue Date 16-Jul-2018

Revision date 12-Jun-2023

Version 1
EN

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

1

Product identifier

Product Name New100N®

Product Code NDF00014

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use water activity control agent

Uses advised against No information available

Details of manufacturer or importer

Supplier

Newpark Drilling Fluids (Australia) LTD
11 Alacrity Place
Henderson, WA, 6166
Australia

For further information, please contact

Contact Point Telephone: +61 8 9410 8200
Fax: +61 8 9410 8299
Website: www.newpark.com

Emergency telephone number

Emergency telephone number +(61)-290372994 (Australia); +(64)-98010034 (New Zealand); 1-800-424-9300
(International Number);

Section 2: HAZARD(S) IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other hazards which do not result in classification**General Hazards**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**Substance**

Not applicable

Mixture

Chemical name	CAS No	Weight-%
Non-hazardous ingredients	Proprietary	100

Section 4: FIRST AID MEASURES**Description of first aid measures**

Emergency telephone number	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

Suitable extinguishing media	In case of fire, use water fog, dry chemical, CO2 or "alcohol resistant" foam.

Unsuitable extinguishing media	No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous combustion products	Carbon oxides.

Special protective actions for fire-fighters

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

Hazchem code Not Listed.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

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

Section 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Wash contaminated clothing before reuse.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials Strong oxidizing agents

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

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

Biological occupational exposure limits Not applicable

Appropriate engineering controls

Engineering controls Showers
Eyewash stations

Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	No information available.
Appearance	viscous	Odor threshold	No information available
Color	dark brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.5 - 8.5	10% solution
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point	> 177 °C	
Evaporation rate		No information available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No information available
Upper flammability limit:		No data available
Lower flammability limit:		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.23-1.27	
Water solubility	Soluble in water	
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Hyphen		No information available
Kinematic viscosity		
Dynamic viscosity		

Other information

Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity

Reactivity	No information available.

Chemical stability

Stability	Stable under normal conditions.

Explosion data**Sensitivity to Mechanical Impact** None.**Sensitivity to Static Discharge** None.**Possibility of hazardous reactions****Possibility of hazardous reactions** None under normal processing.**Conditions to avoid****Conditions to avoid** None known based on information supplied.**Incompatible materials****Incompatible materials** Strong oxidizing agents.**Hazardous decomposition products****Hazardous Decomposition Products** Carbon oxides.**Section 11: TOXICOLOGICAL INFORMATION****Acute toxicity****Information on likely routes of exposure****Product Information**

.

Inhalation Specific test data for the substance or mixture is not available.**Eye contact** Specific test data for the substance or mixture is not available.**Skin contact** Specific test data for the substance or mixture is not available.**Ingestion** Specific test data for the substance or mixture is not available**Symptoms** No information available.**Numerical measures of toxicity - Product Information****Unknown acute toxicity** 88 % of the mixture consists of ingredient(s) of unknown toxicity

88 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

88 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

88 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

88 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

88 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

*See section 16 for terms and abbreviations***Delayed and immediate effects as well as chronic effects from short and long-term exposure****Skin corrosion/irritation** No information available.**Serious eye damage/eye irritation** No information available.**Respiratory or skin sensitization** No information available.**Germ cell mutagenicity** No information available.

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

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity

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

Persistence and degradability

Persistence and degradability	Inherently biodegradable.

Bioaccumulative potential

Bioaccumulation	MATERIAL DOES NOT BIOACCUMULATE.

Mobility

Mobility in soil	No information available.

Mobility	No information available.

Other adverse effects

Other adverse effects	No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Section 14: TRANSPORT INFORMATION

<u>ADG</u>	Not regulated

<u>IATA</u>	Not Regulated

<u>IMDG</u>	Not Regulated

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

No information available

Section 15: REGULATORY INFORMATION

Regulatory information

National regulations

Australia

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Does not comply
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/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

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Brunei Poison List Not applicable.

Section 16: ANY OTHER RELEVANT INFORMATION

Issue Date 16-Jul-2018

Revision date 12-Jun-2023

Revision Note

No information available.

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

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA Ceiling C	TWA (time-weighted average) Maximum limit value Carcinogen	STEL *	STEL (Short Term Exposure Limit) Skin designation

Disclaimer

This document is provided as an information resource relating exclusively to the product or material described herein. The information contained herein may not be applicable to other products/ materials or processes and may not be valid when this product/material is used in combination with any other product/material or process. The information provided in this document is compiled by Newpark Drilling Fluids LLC or its representatives from various sources including manufacturers, suppliers and other third-party sources, and is based on the information available as of the indicated date of preparation. As the conditions under which this product could be used will vary and may not be within the control of Newpark Drilling Fluids LLC there is no guarantee that the precautions outlined above will be sufficient for all individuals or situations. The buyer assumes all responsibility for using and handling the product in accordance with federal, state, provincial, or local regulations. For the product/ material described in this document, NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

End of Safety Data Sheet

2. Cement and Spacer Chemical Disclosure

A. SYSTEM DETAILS:	
OPERATOR:	Mineral Resources Limited
PROJECT / WELL NAME:	Ventoux-1 Well
SYSTEM:	Pre-job Cement System
TOTAL VOLUME OF SYSTEM:	CEMENT Blend: 251,118 gal per well

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
Cement – Class A	Halliburton	Cement	<u>CONSTITUENT 1 (≤ 90%):</u> 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 <u>CONSTITUENT 2 (≤ 8%):</u> LD50 Oral: 3000 mg/kg (Rat), LD50 inhalation: >3.26 mg/L Freshwater Algae Toxicity 72h EC50: > 14 mg/L (Desmodesmus subspicatus) [ECHA] (Solubility Limit); Freshwater Crustacean Toxicity 48h EC50: > 14 mg/L (Daphnia magna) [ECHA] (Solubility Limit);	21.234%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			Freshwater Fish Toxicity 96h LC50: > 14 mg/L (Oncorhynchus mykiss) [ECHA] (Solubility Limit); Bioaccumulation: Substance is inorganic – bioaccumulation is not applicable. Biodegradation: Substance is inorganic – biodegradation is not applicable. <u>CONSTITUENT 3 (≤ 5%):</u> LD50 Oral: 6450 mg/Kg (Rat), LD50 Inhalation: >3.0 mg/L (Rat), LD50 Dermal: >2000 mg/Kg (Rat) Freshwater Algae Toxicity 72h EC50: > 100 mg/L (Selenastrum capricornutum) [OECD SIDS] (similar substance); Freshwater Crustacean Toxicity 48h EC50: > 100 mg/L (Daphnia magna) [OECD SIDS] (similar substance); Freshwater Fish Toxicity 96h EC50: > 100 mg/L (Oryzias latipes) [OECD SIDS] (similar substance); Bioaccumulation: Substance is inorganic – bioaccumulation is not applicable. Biodegradation: Substance is inorganic – biodegradation is not applicable. <u>CONSTITUENT 4 (≤ 5%):</u> LD50 Oral: >2000 mg/Kg (Rat), LD50 Inhalation: >5.235 mg/L (Rat), LD50 Dermal: >4000 mg/Kg (Rat) Freshwater Algae Toxicity 72hr EC50: >100 g/L (Desmodesmus subspicatus) Freshwater Crustacean Toxicity 48hr EC50: > 100 g/L (Daphnia magna) Freshwater Fish Toxicity 96hr LC50: >100 g/L (Leuciscus idis) Bioaccumulation: Substance is inorganic – bioaccumulation is not applicable. Biodegradation: Substance is inorganic – biodegradation is not applicable. Chronic Effects: Portland Cement is not classified as a carcinogen by NOHSC. Crystalline silica and hexavalent chromium compounds are classified as carcinogenic to humans (IARC Group 1), however due to low levels present and product application, the criterion for classification is not met.		
Cement – Class G + 35% SSA-1	Halliburton	Cement	<u>CONSTITUENT 1 (≤65%):</u>	19.601%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			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 <u>CONSTITUENT 2 (≤35%):</u> 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)		
Barite	Provided by Newpark (refer to Newpark Barite / API Barite SDS)	Weighting Agent	PRODUCT CEFAS LISTED 100% PLONOR <u>CONSTITUENT 1 (≤100%):</u> 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];	5.575%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			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]; Biodegradation: Substance is inorganic – biodegradation is not applicable. <u>CONSTITUENT 2 (≤5%):</u> 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	PRODUCT CEFAS LISTED 100% PLONOR <u>CONSTITUENT 1 (≤60%):</u> 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];	1.399%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			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. <u>CONSTITUENT 2 (≤60%):</u> 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		
Tuned Spacer III	Halliburton	Mud/Cement Spacer	<u>CONSTITUENT 1 (≤30%):</u> 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. <u>CONSTITUENT 2 (≤10%):</u> 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.	1.329%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			<u>CONSTITUENT 3 (≤5%):</u> 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]; <u>CONSTITUENT 5 (≤100%):</u> Oral LD50: >15000 mg/kg (Human) 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. <u>CONSTITUENT 6 (≤1%):</u> 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.		

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
Halad-413L	Halliburton	Fluid Loss Additive	PRODUCT CEFAS LISTED <u>CONSTITUENT 1 (≤30%):</u> Oral LD50: >2000 mg/kg (Rat) Marine Water Algae Toxicity 72h EC50: 1102 mg/L (Skeletonema costatum) [OSPAR]; Marine Water Crustacean Toxicity 48h LC50: > 2000 mg/L (Acartia tonsa) [OSPAR]; Marine Water Fish Toxicity 96h LC50: > 1000 mg/L (Scophthalmus maximus) [OSPAR]; Bioaccumulation Log 49now: < 3.5 [Halliburton Funded Study]; Marine Water Biodegradation 28d: 6 % [Halliburton Funded Study]; <u>CONSTITUENT 2 (≤100%):</u> 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	0.437%	Y
Gascon 469	Halliburton	Cement Additive Stabiliser	PRODUCT CEFAS LISTED 100% PLONOR <u>CONSTITUENT 1 ≤1%</u> Oral LDL: 500 mg/kg (Rabbit), Dermal LD50: 1350 mg/kg (Rabbit) Freshwater Crustacean Toxicity 48h EC50: 40.4 mg/L (Ceriodaphnia sp.) [ECHA]; Freshwater Fish Toxicity 96h LC50: 45.4 mg/L (Oncorhynchus mykiss) Freshwater Fish Toxicity 96h LC50: 125 mg/L (Gambusia affinis) [OECD SIDS]; Bioaccumulation: Substance is inorganic – bioaccumulation is not applicable. Biodegradation: Substance is inorganic – biodegradation is not applicable. <u>CONSTITUENT 2 ≤60%</u> Oral LD50: >10,000 mg/kg, Inhalation LC50: >0.69 mg/L (4h) (Rat) Freshwater Algae Toxicity 72h EC50: 440 mg/L (Selenastrum capricornutum) [IUCLID; LOLI]; Freshwater Crustacean Toxicity 48h EC50: 7600 mg/L (Ceriodaphnia dubia) [IUCLID; LOLI];	0.365%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			Freshwater Fish Toxicity 96h LC50: 5000 mg/L (Brachydanio rerio) [IUCLID; LOLI]; Bioaccumulation: Substance is inorganic – bioaccumulation is not applicable. Biodegradation: Substance is inorganic – biodegradation is not applicable. CONSTITUENT 3 <= 100% Component is naturally occurring and is not intrinsically hazardous No data available to indicate product or components present at greater than 0.1% are chronic health hazards		
CFR-8L	Halliburton	Friction Reducer	PRODUCT CEFAS LISTED <u>CONSTITUENT 1 (≤60%):</u> 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%. <u>CONSTITUENT 2 (≤100%):</u> 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	0.343%	Y
HR-6L	Halliburton	Cement Retarder	PRODUCT CEFAS LISTED 100% PLONOR <u>CONSTITUENT 1 (≤100%):</u> 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	0.031%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			<u>CONSTITUENT 2 (≤60%):</u> 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]; Biodegradation: 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		
NF-6	Halliburton	Reduces air entrainment into cement slurry	PRODUCT DATA 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]; <u>CONSTITUENT 1 (≤10%)</u> 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 <u>CONSTITUENT 2 (≤5%):</u> Oral LD50: >15900 mg/kg (Mouse), Inhalation LC50: >5 mg/L (4h) (Rat) Marine Algae Toxicity 72h EC50: 41 mg/L (Skeletonema costatum)	0.0905%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			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 <u>CONSTITUENT 3 (≤5%)</u> 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) <u>CONSTITUENT 4 (≤10%)</u> No Hazard Product is naturally occurring <u>CONSTITUENT 5 (≤100%)</u> 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		
Halad-344	Halliburton	Fluid Loss Additive for High Temperature	PRODUCT CEFAS LISTED <u>CONSTITUENT 1 ≤100%</u> Marine Water Algae Toxicity EC50: > 3300 mg/L (Skeletonema costatum [HES Internal Study]) Marine Water Crustacean Toxicity EC50: > 2000 mg/L (Acartia tonsa) [HES study] Marine Fish Toxicity LC50: > 1000 mg/L (Scophthalmus maximus) [HES study] Bioaccumulation Log Pow: < 0 OECD 117 [HES Study]	0.0693%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			0% (OECD 306) [HES Study] <u>CONSTITUENT 2 <=5%</u> PLONAR <u>CONSTITUENT 3 <= 5%</u> PLONAR <u>CONSTITUENT 4 <=5%</u> PLONAR 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. <u>PRODUCT DATA</u> 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];		
SCR-100L	Halliburton	Cement Retarder	PRODUCT CEFAS LISTED <u>PRODUCT DATA</u> Oral Toxicity LD50: >5000 mg/kg (Rat), Dermal LD50 : >2000 mg/kg (Rabbit) Freshwater Fish Toxicity 96h LC50: 4900 mg/L (Oncorhynchus mykiss) Freshwater Crustacean Toxicity 48h LC50: 2800 mg/L (Daphnia magna)	0.0394%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			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		
SA-1015	Halliburton	Suspension Agent	<u>PRODUCT DATA</u> 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	0.0134%	Y
HR-25L	Halliburton	Cement Retarder	PRODUCT CEFAS LISTED <u>CONSTITUENT 1 (≤60%):</u> No Hazard <u>CONSTITUENT 2 (≤60%):</u> Freshwater Algae Toxicity 72h EC50: 51.4 mg/L (Pseudokirchneriella subcapitata) [ECHA]; Freshwater Crustacean Toxicity 48h EC50: 93.3 mg/L (Daphnia magna) [ECHA];	0.031%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Ecotoxicity Info	Product in system fluid (mass %)	SDS Attached
			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];		
Water	Customer Supplied	Water	None	49.44%	N
Total				100%	

C. Chemical List		
Chemicals within products in Part B	CAS number	Maximum Mass fraction in System (%)
Portland cement	65997-15-1	49.4209%
Water (Including Mix Water Supplied by Client) *	-	31.2%
Crystalline silica (impurity)	14808-60-7	8.1%
Barium Sulfate	7727-43-7	5.3%
Water in Products	7732-18-5	1.66%
Limestone	1317-65-3	1.49%
Calcium sulfate dihydrate	10101-41-4	0.849%
Sodium silicate	1344-09-8	0.560%
Granulated Blast Furnace Slag	65996-69-2	0.425%
Sepiolite	63800-37-3	0.266%
Silica, amorphous – fumed	7631-86-9	0.146%

C. Chemical List		
Chemicals within products in Part B	CAS number	Maximum Mass fraction in System (%)
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	0.131%
Sulfonated organic polymer	526203-62-3	0.0990%
Rape Oil	8002-13-9	0.0796%
Diatomaceous earth	61790-53-2	0.0664%
N,N-dimethylacrylamide copolymer with calcium AMPS	103115-52-2	0.0589%
Sodium Lignosulfonate	8061-51-6	0.0546%
Acrylic acid polymer with sodium AMPS, sodium salt	37350-42-8	0.0157%
Dilutan Gum	125005-87-0	0.0134%
Citric acid	77-92-9	0.0133%
Crystalline silica, cristobalite	14464-46-1	0.0133%
Welan gum	72121-88-1	0.0133%
Monopropylene glycol monooleate	1330-80-9	0.00453%
Tartaric acid	87-69-4	0.00408%
Sodium hydroxide	1310-73-2	0.00365%
Calcium hydroxide	1305-62-0	0.00346%
Lecithins	8002-43-5	0.00346%
Sodium sulfate	7757-82-6	0.00346%
Aluminium stearate	637-12-7	0.000905%
Sorbitan, monopalmitate	26266-57-9	0.000905%
2-Bromo-2-(bromomethyl)pentanedinitrile	35691-65-7	0.0000394%
FD&C Blue 1	3844-45-9	0.0000394%
Total		~100.00%

SAFETY DATA SHEET

CEMENT - STANDARD - CLASS A

Revision date: 12-Apr-2024

Revision Number: 18

Section 1: Identification: Product identifier and chemical identity

Product identifier

Product Name CEMENT - STANDARD - CLASS A

Product Code(s) HM001887

Other means of identification

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 2

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.
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.
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.

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	1 - 5%

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 No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

Section 5: Firefighting measures**Suitable Extinguishing Media**

Suitable extinguishing media None - does not burn.

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

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

Specific hazards arising from the chemical

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.
Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Special protective actions for fire-fighters

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

Section 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

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

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

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

Precautions to prevent secondary hazards

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

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

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash it before reuse. Avoid breathing vapours or mists.

General hygiene considerations 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. 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: 0.05 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	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust

	: (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction	
	: (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. 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 Impervious rubber 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	3.15	
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. 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	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. 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

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

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

May cause 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

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	Crustacea

			microorganisms	
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 2 6 5

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 12-Apr-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**CEMENT - CLASS G + 35% SSA-1**

Revision Date: 11-Feb-2021

Revision Number: 32

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 CEMENT - CLASS G + 35% SSA-1

Other means of Identification

Synonyms None

Hazardous Material Number: HM004641

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 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
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 1 - H372

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
 H372 - Causes damage to organs through prolonged or repeated exposure

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
 P280 - Wear protective gloves/protective clothing

Response

P281 - Use personal protective equipment as required
 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
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
 P405 - Store locked up
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Storage**Disposal****Contains****Substances**

Portland cement
 Crystalline silica, quartz

CAS Number

65997-15-1
 14808-60-7

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
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	30 - 60%	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 severe eye irritation which may damage tissue. Causes skin irritation. May cause allergic skin reaction. 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.

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.

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. 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: 0.1 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.

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.

Hand Protection

Normal work 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.

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: Gray

Odor: Odorless

Odor Threshold: No information available

PropertyValues

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	2.97 g/cm ³ (20 °C/68 °F)
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

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 severe eye irritation which may damage tissue. Causes skin irritation. May cause allergic skin reaction. 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	> 2000 mg/kg (Rat)	> 2000 mg/kg	> 1 mg/L (Rat) 4h
Crystalline silica, quartz	14808-60-7	> 15000 mg/kg (human)	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. Will damage tissue.

Skin Contact

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

Ingestion	cause an allergic skin reaction. May cause abdominal pain, vomiting, nausea, and diarrhea.
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).

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	Not applicable

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

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.

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

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

H372 - Causes 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 datawww.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**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

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

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

Property	Values
Remarks/ - Method	
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

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-2020

Revision Number: 33

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 GASCON 469

Other means of Identification

Synonyms None

Hazardous Material Number: HM000753

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 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

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 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 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.

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. Dust/mist respirator. (N95, P2/P3)
Hand Protection	None known.
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
Odor: Odorless
Color: Transparent
Odor Threshold: No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	10
Freezing Point / Range	No data available
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	No data available
Vapor Density	No data available
Specific Gravity	1.1
Water Solubility	Soluble in water (10g/100ml)
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 (%) 80

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 acids.

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	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	None known.
Eye Contact	May cause mechanical irritation to eye.
Skin Contact	May cause mild skin irritation.
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**

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.

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

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:** 30-Apr-2020**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

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

HR-6L

Revision Date: 10-Mar-2020

Revision Number: 23

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 HR-6L

Other means of Identification

Synonyms None

Hazardous Material Number: HM000901

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 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 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.

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.

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 (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

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: Liquid

Color

Dark brown

Odor: Molasses

Odor Threshold:

No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	9.5
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	> 98 °C / > 210 °F (PMCC)
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.21
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
<u>9.2. Other information</u>	
VOC Content (%)	No data available
Liquid Density	10.08 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

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 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	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**

This product is not regarded as hazardous waste. 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

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: 10-Mar-2020

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**HALAD® 344 CEMENT ADDITIVE**

Revision Date: 01-Feb-2021

Revision Number: 45

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 HALAD® 344 CEMENT ADDITIVE

Other means of Identification

Synonyms None

Hazardous Material Number: HM000816

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

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	NF	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 Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate 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

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. 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. Store away from oxidizers. 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
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. Dust/mist respirator. (N95, P2/P3)

Hand Protection

None known.

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:	Powder	Color	White to off white
Odor:	Odorless	Odor Threshold:	No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	No data available
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	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.22
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 (%)	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

None known.

10.6. Hazardous decomposition products

Oxides of nitrogen. Carbon monoxide and carbon dioxide. 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	None known.
Eye Contact	May cause mechanical irritation to eye.
Skin Contact	Not irritating to skin in rabbits.
Ingestion	No adverse health effects are expected from swallowing.

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

Not readily biodegradable

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

Does not bioaccumulate.

Substances	CAS Number	Bioaccumulation
Contains no hazardous substances in	NA	No information available

concentrations above cut-off values according to the competent authority		

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. 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 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 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**SCR-100L**

Revision Date: 28-Jan-2020

Revision Number: 43

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 SCR-100L

Other means of Identification

Synonyms None

Hazardous Material Number: HM001254

Recommended use of the chemical and restrictions on use

Recommended Use 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 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 Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate 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

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. 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. Store in a dry location. 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 (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

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: Odorless

Color Blue
Odor Threshold: No information available

PropertyValuesRemarks/ - Method**pH:**

3 - 4 (28%)

Freezing Point / Range

-4 °C

Melting Point / Range

No data available

Pour Point / Range

No data available

Boiling Point / Range

No data available

Flash Point

> 93 °C / > 200 °F (PMCC)

Evaporation rate

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Specific Gravity

1.16

Water Solubility

Soluble in water

Solubility in other solvents

No data available

Partition coefficient: n-octanol/water

No data available

Autoignition Temperature

520 °C

Decomposition Temperature

No data available

Viscosity

15-30 cP @ 25°C

Explosive Properties

No information available

Oxidizing Properties

No information available

9.2. Other information**VOC Content (%)**

~60%

Liquid Density

9.66

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 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	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

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 or burn in an 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	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

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

All components are listed on the NZIoC or are subject to a relevant exemption, permit, or

Chemicals 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: 28-Jan-2020

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-1015

Revision Date: 28-Jan-2020

Revision Number: 24

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 SA-1015

Other means of Identification

Synonyms None

Hazardous Material Number: HM007221

Recommended use of the chemical and restrictions on use

Recommended Use Suspending Agent

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

Dust can form an explosive mixture in air

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

Move person to fresh air.

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. 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. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

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. 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. Avoid creating or inhaling dust. Avoid dust accumulations. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment. Slippery when wet.

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 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
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.

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

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: Powder
Odor: Slight

Color White to tan
Odor Threshold: No information available

Property

Remarks/ - Method

Values

pH:

7 (1%)

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

> 93 °C / > 200 °F (PMCC)

Evaporation rate

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Specific Gravity

No data available

Water Solubility

Forms gel

Solubility in other solvents

No data available

Partition coefficient: n-octanol/water

No data available

Autoignition Temperature

204 °C / 400 °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 oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure

Principle Route of Exposure Eye and skin contact.

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

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.
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

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:**

28-Jan-2020

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**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 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:**

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

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

3. Alternative Drilling Fluid system

A. SYSTEM DETAILS:	
OPERATOR:	Mineral Resources Limited
PROJECT / WELL NAME:	Ventoux-1 Well
SYSTEM:	Alternative Drilling Fluid System / Alternative Plug and Abandonment Fluid System
TOTAL VOLUME OF SYSTEM (m ³):	301 m ³ per well

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
Water	N/A	Base Fluid	N/a	98.74%	N/A
Soda Ash	Redox	Calcium Sequester	<u>Constituents:</u> SODIUM CARBONATE <u>Acute Toxicity:</u> LD50 Oral (Rat): 4090 mg/kg LC50 Inhalation (Rat): 2300 mg/m3 (2h) <u>Chronic Toxicity:</u> No known sensitizing, carcinogenic, reproductive, or mutagenic effects. <u>Ecotoxicity:</u> This product is not considered toxic to algae, fish, daphnia, or invertebrates. LC50 (96h) Lepomis macrochirus: 300 mg/l LC50 (96h) Pimephales promelas: 310-1220 mg/l EC50 (120h) Nitzschia: 242 mg/l EC50 (48h) Daphnia magna: 265 mg/l <u>Biodegradation/Bioaccumulation:</u>	0.02%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			Not applicable – inorganic material		
POLY-PLUS	MI Swaco	Viscosifier	<u>Constituents:</u> HYDROTREATED LIGHT PETROLEUM DISTILLATE <u>Acute Toxicity:</u> None <u>Chronic Toxicity:</u> Does not contain any components suspected to be sensitizing, mutagenic, or carcinogenic. No known reproductive or developmental toxicity <u>Ecotoxicity:</u> Not considered toxic to algae, fish, or invertebrates. <u>Biodegradation/Bioaccumulation:</u> No data available	0.18%	Y
DUO-VIS	MI Swaco	Viscofier	<u>Constituents:</u> GLYOXAL 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 <u>Acute Toxicity:</u> None <u>Chronic Toxicity:</u> No known sensitizing or reproductive effects. <u>Ecotoxicity:</u> This product is not considered toxic to algae, fish, or invertebrates <u>Biodegradation/Bioaccumulation:</u> Product is biodegradable, does not bioaccumulate	0.16%	Y
POLYPAC	MI Swaco	Fluid Loss	<u>Constituents:</u>	0.25%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			POLYANIONIC CELLULOSE <u>Acute Toxicity:</u> LD50 Oral (Rat): 27000 mg/kg LD50 Dermal (Rabbit): >2 g/kg LC50 Inhalation (Rat): > 5800 mg/m3 (4h) <u>Chronic Toxicity:</u> No known carcinogenic properties or chronic impacts <u>Ecotoxicity:</u> Not considered toxic to algae, fish, or invertebrates. <u>Biodegradation/Bioaccumulation:</u> Product is biodegradable, does not bio accumulate.		
Nuosept 78	Troy	Biocide	<u>Constituents:</u> HEXAHYDRO-1,3,5-TRIS-(-2-HYDROXYETHYL)-S-TRIAZINE <u>Acute Toxicity:</u> LD50 Oral (Rat - Female): 2000 mg/kg LC50 Dermal (Rat): > 1009-3950 mg/kg <u>Chronic Toxicity:</u> No known carcinogenic, reproductive, or teratogenic effects. Skin sensitizing <u>Ecotoxicity:</u> Hexahydro-1,3,5-Tris-(-2-Hydroxyethyl)-S-Triazine LC50 (96h) (Danio rerio (zebra fish)): > 100 mg/l EC50 (48h) (Water flea (Daphnia magna)): > 100 mg/l EC50 (72h) (Algae, algal mat (Algae)): > 10 < 100 mg/l 2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl) triethanol	0.01%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			LC50 (96h) (oncorhynchus mykiss (rainbow trout)): > 100 mg/l EC50 (48h) (Water flea (Daphnia magna)): 27,9 mg/l ErC50 (72h) (Green Algae): > 10-100 mg/l <u>Biodegradation/Bioaccumulation:</u> 2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl) triethanol Biodegradation: >70% (28d) Readily Biodegradable. Has low bioaccumulation potential.		
PLATINUM ROD EASE	MI Swaco	Lubricant	<u>Acute Toxicity:</u> The product component(s) are not classified as environmentally hazardous. <u>Chronic Toxicity:</u> Does not contain any components suspected to be sensitizing, mutagenic, or carcinogenic. No known reproductive or developmental toxicity <u>Ecotoxicity:</u> This product is not considered toxic to algae. This product is not considered toxic to fish. This product is not considered toxic to invertebrates. <u>Biodegradation/Bioaccumulation:</u> No product level data available.	0.14%	Y
KLA-GARD	MI Swaco	Shale Control Agent	<u>Acute Toxicity:</u> The product component(s) are not classified as environmentally hazardous. <u>Chronic Toxicity:</u> Does not contain any components suspected to be sensitizing, mutagenic, or carcinogenic. No known reproductive or developmental toxicity	0.22%	Y

B. PRODUCT LIST					
Trade name	Supplier	Purpose	Toxicity & Eco toxicity Info	% Product in system fluid	SDS Attached
			<u>Ecotoxicity:</u> This product is not considered toxic to algae. This product is not considered toxic to fish. This product is not considered toxic to invertebrates. <u>Biodegradation/Bioaccumulation:</u> Readily biodegradable (ECHA data) (PRODUCT). Bioaccumulation is unlikely. (ECHA data) (PRODUCT)		
RING FREE	MI Swaco	Drill fluid additive	<u>Constituents:</u> POLYMER <u>Acute Toxicity:</u> None <u>Chronic Toxicity:</u> No known carcinogenic, mutagenic, or sensitizing properties or chronic impacts <u>Ecotoxicity:</u> The product component(s) are not classified as environmentally hazardous. Toxicity to algae: This product is not considered toxic to algae. LC50 / 72 hrs: > 100 mg/l (estimated). <u>Biodegradation/Bioaccumulation:</u> Not readily biodegradable. Does not bioaccumulate.	0.27%	Y
Total					100.00%

C. Chemical List (Chemicals within fluid system identified in Table B)		
Chemicals Name	CAS number	Mass fraction (%)
Water	-	97.71410 %
Sodium carboxymethylcellulose	9004-32-4	0.58128 %
Xanthan Gum	11138-66-2	0.38403 %
2-hydroxy-N,N,N-trimethylethanaminium chloride	67-48-1	0.37396 %
Soybean oil, crude	8001-22-7	0.29175 %
Sodium polyacrylate	9003-04-7	0.29031 %
2-Propenoic acid, polymer with 2-propenamide, sodium salt	25987-30-8	0.10518 %
Distillates, petroleum, hydrotreated light	64742-47-8	0.10518 %
Sodium carbonate	497-19-8	0.04844 %
Oils, animal, mixed with vegetable oil Me esters, sulfurized	68990-81-8	0.04462 %
2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol	4719-04-4	0.02591 %
Sorbitan, mono-(9Z)-9-octadecenoate	1338-43-8	0.01052 %
Isotridecanol, ethoxylated	69011-36-5	0.01052 %
Polyoxyethylene sorbitan trioleate	9005-70-3	0.00686 %
Glyoxal	107-22-2	0.00349 %
Ethane-1,2-diol (impurity)	107-21-1	0.00267 %
2-aminoethanol	141-43-5	0.00100 %
N,N-dimethylmethanamine (impurity)	75-50-3	0.00016 %
Total		100.00%

1. IDENTIFICATION

Product Name	Soda Ash Dense
Other Names	Soda ash, dense; Sodium carbonate; Sodium carbonate, anhydrous; Washing soda
Uses	Cleaning agents and additives; Dishwashing and laundry detergents; Photochemicals; Fillers; Laboratory chemicals; pH-regulating/buffering agent in cosmetic products; Used in the manufacture of glass; Fuel gas desulphurisation; Water treatment and paper/pulp industry.
Chemical Family	No Data Available
Chemical Formula	Na ₂ CO ₃
Chemical Name	Carbonic acid, disodium salt
Product Description	Inorganic (alkaline) salt.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories	Serious Eye Damage/Irritation - Category 2A



Pictograms



Signal Word

Warning

Hazard Statements

H319

Causes serious eye irritation.

Precautionary Statements Prevention

P264

Wash 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.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium carbonate, anhydrous	Na ₂ CO ₃	497-19-8	>=99 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Get immediate medical advice/attention. If vomiting occurs, give further water. Never give anything by mouth to an unconscious person.

Eye

IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Skin

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.

Inhaled

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove contaminated clothing and loosen remaining clothing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Advice to Doctor

Treat symptomatically.

Medical Conditions Aggravated by Exposure

No information available.

5. FIRE FIGHTING MEASURES

General Measures

If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.

Flammability Conditions

Non-combustible; Material itself does not burn.



Extinguishing Media	If material is involved in a fire, use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	Decomposes on heating, emitting toxic fumes.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Carbon oxides, Sodium oxides.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material - slipping hazard! Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	After cleaning, flush away any residual traces with water. *Prevent any mixture with an acid into the sewer/drain (gas formations).
Environmental Precautionary Measures	Prevent entry into drains and waterways. Local authorities should be advised if significant spillages cannot be contained.
Evacuation Criteria	Spill or leak area should be isolated immediately. Evacuate personnel to safe areas. Keep unauthorised personnel away.
Personal Precautionary Measures	Wear protective equipment to prevent skin and eye contact and breathing in dust (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid extreme heat and contact with incompatible materials (see SECTION 10).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check regularly for spills. Avoid moisture/humidity. Avoid extreme heat. Keep away from foodstuffs and incompatible materials (see SECTION 10).
Container	Keep in properly labelled original container or suitable packaging material, i.e. Polyethylene, woven plastic material + PE. Do not store in moisture permeable material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No value assigned for this specific material by Safe Work Australia. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ , measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m ³ ; TWA = 3 mg/m ³ (respirable).
Exposure Limits	No Data Available
Biological Limits	No information available.



Engineering Measures	Provide appropriate exhaust ventilation at places where dust is formed. Apply technical measures to comply with the occupational exposure limits.
Personal Protection Equipment	- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or an inhalation risk exists. Recommended: Dust mask/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Safety glasses with side shields or protective goggles. - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. neoprene, natural rubber. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Long-sleeved protective clothing; Overalls or dust-impervious protective suit; Apron (rubber or plastic); Safety shoes or boots (rubber or plastic).
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Granular or powder
Odour	Odourless
Colour	White
pH	10.3 - 11.3 (10 g/L aqueous solution)
Vapour Pressure	Negligible (@ No Data Available)
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	851 °C
Freezing Point	No Data Available
Solubility	Soluble in water
Specific Gravity	2.53 (Water = 1)
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	>=400 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Hygroscopic: absorbs moisture or water from surrounding air.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.



Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Material itself does not burn.
Reactions That Release Gases or Vapours	Decomposes on heating, emitting toxic fumes, including Carbon dioxide.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	Reacts exothermically with strong acids evolving carbon dioxide.
Chemical Stability	Stable if stored and handled under recommended conditions.
Conditions to Avoid	Avoid generating dust. Avoid exposure to moisture. Avoid exposure to heat.
Materials to Avoid	Incompatible/reactive with acids, phosphorus pentoxide, aluminium, lead, magnesium, iron, zinc, fluorine.
Hazardous Decomposition Products	Decomposes on heating, emitting toxic fumes, including Carbon dioxide.
Hazardous Polymerisation	Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: Low acute toxicity following oral, dermal and inhalation exposure. In case of ingestion, may cause severe irritation, nausea, abdominal pain, vomiting, diarrhoea. - Skin corrosion/irritation: Prolonged contact may cause skin irritation. - Eye damage/irritation: Causes serious eye irritation; may cause redness, lachrymation, swelling. - Respiratory/skin sensitisation: Not a skin sensitiser. - Germ cell mutagenicity: Not considered to be genotoxic. - Carcinogenicity: Not considered carcinogenic. - Reproductive toxicity: Does not show specific reproductive or developmental toxicity. - STOT (single exposure): In case of inhalation at high concentrations, may cause cough, nose, throat and lung irritation. - STOT (repeated exposure): Carbonate ions are neutralised under physiological conditions to form bicarbonate ions and/or carbon dioxide, which are major products of all human metabolic activities; therefore, systemic toxicity is not expected. Risk of sore throat, nose bleeds in case of repeated or prolonged inhalation exposure. - Aspiration toxicity: No information available.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rats: >2,800 mg/kg [Supplier's SDS].
Other	Acute toxicity (Dermal): - LD50, Rabbit: >2,000 mg/kg [Supplier's SDS].
Inhalation	Acute toxicity (Inhalation): - LC50, Rat: 2.3 mg/l (2 h) [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (<i>Lepomis macrochirus</i>): 300 mg/L (96 h). - EC50, Crustacea (<i>Ceriodaphnia dubia</i>): 200 mg/L (48 h).
Persistence/Degradability	Sodium carbonate is an inorganic substance. In the presence of water, it will fully dissociate to sodium and carbonate ions which will disperse in the various media.
Mobility	Solid sodium carbonate has a negligible vapour pressure and for this reason it will not be distributed to the atmosphere. If sodium carbonate is emitted to water it will remain in the water phase. If the pH is decreased then



carbonic acid (H₂CO₃ or CO₂) can be formed. If the concentration of carbon dioxide in water is above the water solubility limit, the carbon dioxide will distribute to the atmosphere. If sodium carbonate is emitted to soil it can escape to the atmosphere as CO₂, precipitate as a metal carbonate, form complexes or stay in solution.

Environmental Fate

Prevent entry into drains and waterways.

Bioaccumulation Potential

Does not bioaccumulate. The substance dissociates fully on introduction to water.

*Log Po/w is not applicable for an inorganic compound which dissociates.

Environmental Impact

No Data Available

13. DISPOSAL CONSIDERATIONS

General Information

If recycling is not practicable, dispose of in accordance with local/regional/national regulations.

Special Precautions for Land Fill

Packaging disposal: Where possible, recycling is preferred to disposal or incineration. Clean container with water; Dispose of rinse water in accordance with local and national regulations.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name

Dense Soda Ash

Class

No Data Available

Subsidiary Risk(s)

No Data Available

No Data Available

UN Number

No Data Available

Hazchem

No Data Available

Pack Group

No Data Available

Special Provision

No Data Available

Comments

NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name

Dense Soda Ash

Class

No Data Available

Subsidiary Risk(s)

No Data Available

UN Number

No Data Available

Hazchem

No Data Available

Pack Group

No Data Available

Special Provision

No Data Available

EMS

No Data Available

Marine Pollutant

No

Comments

NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name

Dense Soda Ash

Class

No Data Available

Subsidiary Risk(s)

No Data Available



UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	ALKALINE SALTS, being the carbonate, silicate or phosphate salts of sodium or potassium alone or in any combination, are listed in Schedule 5 of the SUSMP in (other) solid preparations, the pH of which in a 10 g/L aqueous solution is more than 11.5.
Poisons Schedule (Aust)	Not Scheduled

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	207-838-8
Europe (REACH)	Listed
Japan (ENCS/METI)	1-164
Korea (KECI)	KE-31380
Malaysia (EHS Register)	Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSF)	Listed
USA (TSCA)	Listed

16. OTHER INFORMATION

SOCABR1000, SOCABR1100, SOCABR2000, SOCARB0005, SOCARB0215, SOCARB1000, SOCARB1001,



Related Product Codes

SOCARB1002, SOCARB1003, SOCARB1004, SOCARB1005, SOCARB1006, SOCARB1007, SOCARB1008, SOCARB1009, SOCARB1010, SOCARB1011, SOCARB1012, SOCARB1013, SOCARB1014, SOCARB1015, SOCARB1016, SOCARB1017, SOCARB1018, SOCARB1019, SOCARB1022, SOCARB1100, SOCARB1101, SOCARB1102, SOCARB1103, SOCARB1104, SOCARB1105, SOCARB1106, SOCARB1107, SOCARB1108, SOCARB1109, SOCARB1110, SOCARB1112, SOCARB1113, SOCARB1114, SOCARB1140, SOCARB1150, SOCARB1160, SOCARB1200, SOCARB1201, SOCARB1202, SOCARB1210, SOCARB1211, SOCARB1212, SOCARB1240, SOCARB1300, SOCARB1500, SOCARB1501, SOCARB1502, SOCARB1650, SOCARB1700, SOCARB1807, SOCARB1808, SOCARB1809, SOCARB1810, SOCARB1811, SOCARB1812, SOCARB1813, SOCARB1814, SOCARB1815, SOCARB1816, SOCARB1817, SOCARB1818, SOCARB2100, SOCARB2150, SOCARB2500, SOCARB2501, SOCARB2502, SOCARB2503, SOCARB2504, SOCARB2505, SOCARB2515, SOCARB2525, SOCARB2530, SOCARB2600, SOCARB3000, SOCARB3010, SOCARB3020, SOCARB3030, SOCARB3040, SOCARB4000, SOCARB4600, SOCARB4700, SOCARB4701, SOCARB5000, SOCARB5001, SOCARB5100, SOCARB5200, SOCARB5300, SOCARB5500, SOCARB5501, SOCARB5510, SOCARB5600, SOCARB5601, SOCARB5602, SOCARB5605, SOCARB5606, SOCARB5608, SOCARB5609, SOCARB5610, SOCARB5611, SOCARB5700, SOCARB5800, SOCARB5900, SOCARB6000, SOCARB6001, SOCARB6100, SOCARB6200, SOCARB6500, SOCARB6501, SOCARB6600, SOCARB6601, SOCARB6700, SOCARB7000, SOCARB7001, SOCARB7002, SOCARB7003, SOCARB8000, SOCARB8001, SOCARB8002, SOCARB8003, SOCARB8100, SOCARB8101, SOCARB9000, SOCARB9200, SOCARB9201, SOCARB9500, SOCARB9600, SOCARB9990, SOCARF1000, SOCARF1001, SOCARF1100, SOCARF2500, SOCARF3000, SOCARF4000, SOCARF5000, SOCARF5001, SOCARF5002, SOCARF5100, SOCARF5200, SOCARF9900, SODCAB1000, SODCAB1001, SODCAB1002, SODCAB1003, SODCAB1004, SODCAB1005, SODCAB1006, SODCAB1100, SODCAB1101, SODCAB1102, SODCAB1103, SODCAB1104, SODCAB1105, SODCAB1106, SODCAB1107, SODCAB1108, SODCAB1140, SODCAB1200, SODCAB1210, SODCAB1240, SODCAB2100, SODCAB2101, SODCAB2102, SODCAB2151, SODCAB2600, SODCAB2601, SODCAB2700, SODCAB2800, SODCAB2900, SODCAB2901, SODCAB3000, SODCAB3001, SODCAB3100, SODCAB3101, SODCAB3200, SODCAB3300, SODCAB3400, SODCAB3500, SODCAB3501, SODCAB3503, SODCAB3600, SODCAB3700, SODCAB3800, SODCAB3900, SODCAB3901, SODCAB3902, SODCAB4000, SODCAB4100, SODCAB4200, SODCAB4300, SODCAB4400, SODCAB5500, SODCAB5800, SODCAB5801, SODCAB5900, SODCAB5910, SODCAB6000, SODCAB6001, SODCAB6010, SODCAB6015, SODCAB6100, SODCAB6500, SODCAB6501, SODCAB6600, SODCAB6601, SODCAB6605, SODCAB7000, SODCAB7500, SODCAB7600, SODCAB8000, SODCAB8800, SODCAB9000, SODCAB9500, SODCAB9600, SODCAR1000, SODCAR0500, SODCAR0501, SODCAR0502, SODCAR0503, SODCAR1000, SODCAR1001, SODCAR1002, SODCAR1003, SODCAR1004, SODCAR1005, SODCAR1006, SODCAR1007, SODCAR1008, SODCAR1009, SODCAR1010, SODCAR1100, SODCAR1101, SODCAR1200, SODCAR2000, SODCAR2001, SODCAR3000, SODCAR3001, SODCAR3100, SODCAR3300, SODCAR3400, SODCAR3500, SODCAR4000, SODCAR5000, SODCAR5001, SODCAR5500, SODCAR6500, SODCAR7000, SODCAR7500, SODCAR9000, SODCAR9500

Revision

5

Revision Date

11 Nov 2021

Key/Legend

< Less Than

> Greater Than

AICS Australian Inventory of Chemical Substances**atm** Atmosphere**CAS** Chemical Abstracts Service (Registry Number)**cm²** Square Centimetres**CO₂** Carbon Dioxide**COD** Chemical Oxygen Demand**deg C (°C)** Degrees Celcius**EPA (New Zealand)** Environmental Protection Authority of New Zealand**deg F (°F)** Degrees Fahrenheit**g** Grams**g/cm³** Grams per Cubic Centimetre**g/l** Grams per Litre**HSNO** Hazardous Substance and New Organism**IDLH** Immediately Dangerous to Life and Health**immiscible** Liquids are insoluble in each other.**inHg** Inch of Mercury**inH₂O** Inch of Water**K** Kelvin**kg** Kilogram**kg/m³** Kilograms per Cubic Metre**lb** Pound**LC₅₀** LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.**LD₅₀** LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.**ltr** or **L** Litre**m³** Cubic Metre**mbar** Millibar**mg** Milligram**mg/24H** Milligrams per 24 Hours**mg/kg** Milligrams per Kilogram**mg/m³** Milligrams per Cubic Metre**Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre
mmH₂O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Health and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight





Safety Data Sheet

SDS no. PID1236

POLY-PLUS* DRY

Revision date 20-Dec-2023

Supersedes Date: 12-Nov-2018

Version 7

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

1.1 Product identifier

Product name POLY-PLUS* DRY
Product code PID1236

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale stabilizer.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier

Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word

None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

—

Contains No hazardous components

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.



4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing mediaWater Fog, Alcohol Foam, CO₂, Dry Chemical.**Extinguishing media which must not be used for safety reasons**

None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

None known.

Hazardous combustion products

Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes extremely slippery when wet.

6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up



Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes extremely slippery when wet.

Hygiene Measures

Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Avoid contact with: Strong bases, Oxidizing agents.
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m ³ Respirable Dust, 10mg/m ³ Total Dust.

Notes

No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation

Personal protective equipment

Eye protection

Use eye protection according to EN 166, designed to protect against powders and dusts. Tightly fitting safety goggles. Safety glasses with side-shields.

Hand protection

Wear gloves according to EN 374 to protect against skin effects from powders. Use



Respiratory protection	protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure	Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Granular
Appearance	Powder Dust
Color	White - Off-white
Odor	Odorless

Property	Values	Remarks
pH	No information available	
pH @ dilution	5 - 9	@ 5 g/l
Melting / freezing point	> 150 °C / 302 °F	
Boiling point/range	No information available	
Flash point	Not applicable	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.25 - 1.40	20 °C
Bulk density	641-737 kg/m ³ / 40-46 lb/ft ³	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 150 °C / 302 °F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	

**Explosive properties**
Oxidizing propertiesNot applicable
None known.**9.2 Other information****Pour point**

No information available

Molecular weight

No information available

VOC content(%)

No information available

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity**10.1 Reactivity**

Contact with strong bases liberates ammonia.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions**Hazardous polymerization**

Hazardous polymerization does not occur.

Hazardous Reactions

Oxidizing agents may cause exothermic reactions.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong bases. Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Inhalation**

Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact

Dust may cause mechanical irritation.

Skin contact

Prolonged contact may cause redness and irritation.

Ingestion

Ingestion may cause stomach discomfort.

Unknown acute toxicity

Not applicable.



LD50 Oral	> 5000 mg/kg (rat) (Mixture)
LD50 Dermal	> 5000 mg/kg (rat) (Mixture)

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae

IC50/Algae/72 hrs. : > 100 mg/L (OECD 201) (Mixture).

Toxicity to fish

LC50/Danio rerio and Fathead minnow/96 hrs. : > 100 mg/L (OECS 203) (Mixture).

Toxicity to daphnia and other aquatic invertebrates

EC50/Daphnia/48 hrs. : > 100 mg/L (OECD 201) (Mixture).

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.



12.4 Mobility

Mobility

Soluble in water.

Mobility in soil

No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations.

Contaminated packaging

Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class Not regulated

IMDG/ANTAQ Hazard class Not regulated

ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group Not regulated

IMDG/ANTAQ Packing group Not regulated

ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**

Please contact SDS@slb.com for info regarding transport in Bulk.

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

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	12-Nov-2018
Revision date	20-Dec-2023
Version	7



This SDS has been revised in the following section(s) All sections No changes with regard to classification have been made.

Key literature references and sources for data

www.ChemADVISOR.com

Supplier

National Chemical Inventories

National regulatory information

National occupational exposure limits

HMIS classification

Health	1
Flammability	0
Physical hazard	0
PPE	E

*A mark of M-I L.L.C., a Schlumberger Company

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 DUO-VIS*

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

1.1 Product identifier

Product name DUO-VIS*
Product code PID510

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Viscosifier.
Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified
Environmental hazards Not classified
Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

—

Contains

Glyoxal

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients**3.1 Substances**

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Glyoxal	203-474-9	107-22-2	<1

Comments

The product contains other ingredients which do not contribute to the overall classification.

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

4. First Aid Measures**4.1 First aid measures**

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Water Fog, Alcohol Foam, 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

Dust may form explosive mixture in air.

Hazardous combustion products

Fire or high temperatures create: Carbon oxides (CO_x).

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. Use non-sparking tools and equipment. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures

Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid heat, flames and other sources of ignition. Protect from moisture. Avoid contact with: Strong oxidizing agents.
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	India	Indonesian	Japan
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	Kazakhstan	Kuwait	New Zealand
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	Malaysia	Philippines	Russia
Glyoxal	Not determined	Not determined	Not determined
Chemical Name	Thailand	Vietnam	Turkey
Glyoxal	Not determined	Not determined	Not determined

Notes

No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation

Personal protective equipment

Eye protection

Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

Hand protection

Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Butyl Neoprene Nitrile Frequent change is advisable

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection

Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures

Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure

Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odor	Mild
Color	Cream - Tan

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	Not applicable	
pH @ dilution	7	@ 1% sol.
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	

Relative Vapor Density	No information available	
Specific gravity	1.5	20 °C
Bulk density	50 lb/ft ³ (800 kg/m ³)	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	> 200 °C / > 392 °F	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Partition Coefficient (n-octanol/water)	No information available	
Density and/or Relative Density	No information available	
Explosive properties	Suspended dust may present a dust explosion hazard	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glyoxal	= 200 mg/kg (Rat)	= 12700 mg/kg (Rabbit)	= 2.44 mg/L (Rat) 4 h

Sensitization	EUH208 - Contains (Glyoxal). May produce an allergic reaction.
Mutagenic effects	Contains an known or suspected mutagen.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation. Skin contact.
Routes of entry	Inhalation. Skin contact.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae

See component information below.

Toxicity to fish

See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Glyoxal	> 1000 mg/l LC50 Scophthalmus	207 mg/l EC50 Skeletonema 72h	259 mg/L LC50 Acartia 48h

	Maximus 96h SLB data	SLB data	SLB Data

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Glyoxal	Not readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Glyoxal	Does not bioaccumulate

12.4 Mobility

Mobility

Soluble in water. See component information below.

Chemical Name	Mobility
Glyoxal	Soluble in water

Mobility in soil

See component information below.

Chemical Name	Mobility in soil
Glyoxal	Not expected to adsorb on soil

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations.

Contaminated packaging

Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

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

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies

Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	16-Nov-2018
Revision date	03-Mar-2022
Version	13
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made.

Key literature references and sources for data

www.ChemADVISOR.com

Supplier

National Chemical Inventories

National regulatory information

National occupational exposure limits

HMIS classification

Health	2
Flammability	1
Physical hazard	0
PPE	E

*A mark of M-I L.L.C., a Schlumberger Company

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 POLYPAC* (All Grades)

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

1.1 Product identifier

Product name POLYPAC* (All Grades)
Product code 141381
Synonyms POLYPAC* ELV, POLYPAC* R, POLYPAC* UL

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Fluid loss reducer. Viscosifier.
Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards Not classified
Environmental hazards Not classified
Physical Hazards Not classified

2.2 Label elements

Signal word

None

Hazard Statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

Contains

Polyanionic cellulose

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	EC No	CAS No	Weight-%
Polyanionic cellulose	Listed	Proprietary	60-100

3.2 Mixtures

Not applicable

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

Dust may form explosive mixture in air.

Hazardous combustion products

Fire or high temperatures create: Carbon oxides (COx), Sodium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static

discharges. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures

Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component Information

Chemical Name	Arabic	Australia	Egypt
Polyanionic cellulose	Not determined	Not determined	Not determined
Chemical Name	India	Indonesian	Japan
Polyanionic cellulose	Not determined	Not determined	Not determined
Chemical Name	Kazakhstan	Kuwait	New Zealand
Polyanionic cellulose	10 mg/m ³ MAC	Not determined	Not determined
Chemical Name	Malaysia	Philippines	Russia
Polyanionic cellulose	Not determined	Not determined	10 mg/m ³ MAC
Chemical Name	Thailand	Vietnam	Turkey
Polyanionic cellulose	Not determined	Not determined	Not determined

Notes

No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection

Use eye protection according to EN 166, designed to protect against powders and dusts
Safety glasses with side-shields Tightly fitting safety goggles

Hand protection

Wear gloves according to EN 374 to protect against skin effects from powders Use
protective gloves made of: Nitrile Neoprene Frequent change is advisable

Respiratory protection

No personal respiratory protective equipment normally required In case of insufficient
ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European
Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces,
respiratory protection with air supply must be used.

Skin and body protection

Wear suitable protective clothing Eye wash and emergency shower must be available at the
work place.

Hygiene Measures

Wash hands before eating, drinking or smoking Remove and wash contaminated clothing
before re-use



8.2.3 Environmental exposure controls

Environmental exposure

Use appropriate containment to avoid environmental contamination See section 6 for more
information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Granules Powder
Odor	Odorless
Color	White

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	6.0 - 8.5	@ 1% solution
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability	Not applicable	
Explosion limits:		
Upper explosion limit	No information available	
Lower explosion limit	No information available	
Vapor pressure	No information available	
Relative Vapor Density	No information available	
Specific gravity	1.5 - 1.7	@ 25 °C
Bulk density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	

Kinematic viscosity	No information available
Dynamic viscosity	No information available
Partition Coefficient (n-octanol/water)	Not determined
Density and/or Relative Density	No information available
Explosive properties	Suspended dust may present a dust explosion hazard
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Combustible material. Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity	
Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polyanionic cellulose	= 27000 mg/kg (Rat)	No data available	> 5800 mg/m ³ (Rat) 4 h

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of Exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

11.2 Information on other hazards

Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae

This product is not considered toxic to algae.

Toxicity to fish

This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates

This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Polyanionic cellulose	No information available	No information available	No information available

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility

Mobility

Soluble in water.

Mobility in soil

No information available.

12.5 Other adverse effects

None known.

12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations.

Contaminated packaging

Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class Not regulated

IMDG/ANTAQ Hazard class Not regulated

ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group Not regulated

IMDG/ANTAQ Packing group Not regulated

ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

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

This safety data sheet complies with the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies
Eurasian Economic Union: Russian Inventory	Complies

16. Other Information

Prepared by Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

Supersedes Date: 26-Nov-2018

Revision date 28-Nov-2022

Version 4

This SDS has been revised in the All sections No changes with regard to classification have been made.

following section(s)

Key literature references and sources for data

www.ChemADVISOR.com

Supplier

National Chemical Inventories

National regulatory information

National occupational exposure limits

HMIS classification

Health	1
Flammability	1
Physical hazard	0
PPE	E

*A mark of M-I L.L.C., a Schlumberger Company

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

NUOSEPT 78

Section 1. Identification

Product identifier : NUOSEPT 78
Product code : 83256
Chemical identity : 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol
Other means of identification : Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine
Product type : Liquid.

Material uses : Preservative.

Supplier's details : Chemiplas Australia Pty Ltd
Level 1, 128 Jolimont Rd
East Melbourne,
VIC 3002 Australia

Tel: + 61 3 9419 7300
Fax: + 61 3 9419 7676

Manufacturer : Troy Siam Company Limited
616/1 Moo. 9 Kabinburi Industrial Zone,
Kabinburi-Korat Road, T, Nongki,
A. Kabinburi, Prachinburi 25110
Thailand
Phone: +66-37-204-243/250
Fax: +66-37-204 268

Emergency telephone number (with hours of operation) : CHEMTREC - Tel: +61-290372994 (24/7)

Section 2. Hazard(s) identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :



Signal word : **WARNING**

Hazard statements : **Harmful if swallowed.**
May cause an allergic skin reaction.
Causes serious eye irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection: Recommended: chemical splash goggles and/or face shield.. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Section 2. Hazard(s) identification

- Response** : Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
- Storage** : Not applicable.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.

Other hazards which do not result in classification : None known.

Section 3. Composition and ingredient information

- Substance/mixture** : Substance
- Chemical identity** : 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol
- Other means of identification** : Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine

CAS number/other identifiers

- CAS number** : Not available.
- EC number** : Not available.
- Product code** : 83256

Ingredient name	% (w/w)	CAS number
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	78	4719-04-4
2-aminoethanol	1-3	141-43-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : Harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
 irritation
 redness
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire. Warehousing: All materials except Oxidizers can be extinguished by replacing the available air with CO2 when a stationary CO2 installation is installed.
Unsuitable extinguishing media : None known.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Remark** : Excessive heat >147°C (>297°F) will result in decomposition to formaldehyde.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store between the following temperatures: -5 to 30°C (23 to 86°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2-aminoethanol	Safe Work Australia (Australia, 4/2018). STEL: 15 mg/m ³ 15 minutes. STEL: 6 ppm 15 minutes. TWA: 7.5 mg/m ³ 8 hours. TWA: 3 ppm 8 hours.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: chemical splash goggles and/or face shield.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Clear. Colorless. Yellowish.
- Odor** : Characteristic. [Slight]
- Odor threshold** : Not available.
- pH** : 9 to 12
- Melting point/freezing point** : Not available.
- Boiling point** : 110.5°C (230.9°F)
- Flash point** : Closed cup: Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Excessive heat >147°C (>297°F) will result in decomposition to formaldehyde.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : 1.3 to 2.4 kPa (10 to 18 mm Hg) [room temperature]
- Vapor density** : >1 [Air = 1]
- Relative density** : 1.145 to 1.175
- Solubility** : Soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : -1.3
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Dynamic (room temperature): 60 to 100 mPa·s (60 to 100 cP)
Kinematic (room temperature): 0.6 to 1 cm²/s (60 to 100 cSt)

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
NUOSEPT 78	LD50 Dermal LD50 Oral	Rat Rat - Female	>2000 mg/kg 1009 to 3950 mg/kg	- -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
NUOSEPT 78	Eyes - Cornea opacity Skin - Mild irritant	Rabbit Rabbit	59 -	- -	21 days -

Sensitization

Product/ingredient name	Route of exposure	Species	Result
NUOSEPT 78	skin	Mouse	Sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
NUOSEPT 78	-	Experiment: In vivo Subject: Mammalian-Animal	Negative

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: May cause an allergic skin reaction.
Ingestion	: Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Date of issue/Date of revision : 10/20/2021

Date of previous issue : 7/26/2019

Version : 1.02 7/11

Section 11. Toxicological information

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Not available.

General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
NUOSEPT 78	Acute EC50 10 to 100 mg/l Acute LC50 10 to 100 mg/l	Daphnia Fish	48 hours 96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-aminoethanol	-	>90 % - Readily - 21 days	-	-
Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability	
NUOSEPT 78	-	-	Readily	

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
NUOSEPT 78	-1.3	-	low

Date of issue/Date of revision : 10/20/2021

Date of previous issue : 7/26/2019

Version : 1.02 8/11

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA/ICAO
UN number	Not regulated	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AIIIC) : All components are listed or exempted.

Date of issue/Date of revision : 10/20/2021

Date of previous issue : 7/26/2019

Version : 1.02 9/11

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (CSCL) : All components are listed or exempted. Japan inventory (ISHL) : All components are listed or exempted.
Malaysia	: Not determined
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
United States	: All components are listed or exempted.

Section 16. Any other relevant information

History

Date of printing	: 3/28/2023
Date of issue/Date of revision	: 10/20/2021
Date of previous issue	: 7/26/2019
Version	: 1.02

Key to abbreviations	: ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations

Procedure used to derive the classification

Section 16. Any other relevant information

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Expert judgment
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Expert judgment
SKIN SENSITIZATION - Category 1	Expert judgment

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety data sheet number MI15162AUZ

Version 1

Revision date 29/May/2014

Supersedes date 26/Oct/2011



Safety Data Sheet PLATINUM ROD EASE[†]

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name PLATINUM ROD EASE[†]
Product code MI15162AUZ

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Lubricant
Uses advised against None known.

1.3 Details of the supplier of the safety data sheet

Supplier identification

M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
MISDS@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

Regulation (EC) No. 1272/2008

Health hazards Not classified
Environmental hazards Not classified
Physical Hazards Not classified

2.2 Label Elements

Signal word

None

Hazard statements

None

-
-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger

Not Classified

Contains

2.3 Other data

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

Comments

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First aid measures

4.1 Description of 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 removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. 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.

Main 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 CO₂, dry chemical, or foam.

Extinguishing media which shall not be used for safety reasons
Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Precautions against fire and explosion
None known.

Hazardous combustion products
Fire or high temperatures create: 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.

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.

6.3 Methods and materials 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-combustable material and transfer to containers for later disposal. Do not flush into surface water or sanitary sewer system.

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. Remove contaminated clothing. Do not eat, drink or smoke when using this product. 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. Keep airborne concentrations below exposure limits.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store and transport with oxidizers. Alkalies

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

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 measures to reduce exposure

Ensure adequate ventilation. Local exhaust ventilation.

Personal protective equipment

Eye protection

It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection

Repeated or prolonged contact: Use protective gloves made of: Rubber, 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, Use respirator with organic vapor protection (A, brown).

Skin and body protection

Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures

Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.



9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Mild

Colour	Dark brown	
Odor threshold	Not applicable	
Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	> 187.8 °C / > 250 °F	PMCC
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	0.88 - 0.90	
Bulk density	No information available	
Relative 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		
Viscosity, dynamic	No information available	
Log Pow	Not determined	
Explosive properties	Not Applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

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 polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Oxidizing agents. Alkaline.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapours 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.
Acute toxicity	.

Sensitisation 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 None known.

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 No hazard from product as supplied.

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 data available.

12.4 Mobility in soil

Mobility

Dispersible in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

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 transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No.

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 07 99 - wastes not otherwise specified

14. Transport Information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID/ADG).

14.1 UN number

Not regulated

14.2 Proper shipping name

Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class Not regulated

IMDG Hazard class Not regulated

ICAO Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group Not regulated

IMDG Packing group Not regulated

ICAO Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not Applicable

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

Please contact MISDS@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

Germany, Water Endangering Hazardous to water/Class 1
Classes (VwVwS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other Information

Prepared by	Global Chemical Regulatory Compliance (GCRC)
Supersedes date	26/Oct/2011
Revision date	29/May/2014
Version	1
The following sections have been revised	Updated according to GHS.

Text of R phrases mentioned in Section 3
Not classified

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

†A mark of M-I L.L.C.

Disclaimer

The information provided in this Material 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SDS no. PID857
Version 5
Revision date 14-Nov-2017
Supersedes date 24-Sep-2014



Safety Data Sheet KLA-GARD*

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name KLA-GARD*
Product code PID857

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale control agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

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

Classification according to Regulation (EC) No. 1272/2008 [CLP]

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 - EU (§28, 1272/2008)

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Contains

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 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

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 (CO_x), Nitrogen oxides (NO_x), Ammonia.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

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. Ammonia or amines may be released when this component is heated or exposed to high pH.

Hygiene Measures

Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. 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. Avoid contact with: Oxidizing agents Acids Bases
Storage class	Chemical storage.
Packaging materials	Use specially constructed containers only.

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits	Contains no substances with occupational exposure limit values 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

Respiratory protection	training Repeated or prolonged contact Impervious gloves made of: Nitrile Neoprene Break through time >480 minutes Glove thickness >=0.4 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable. No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Respirator with combination filter for vapour/particulate (EN 141), Chemical respirator with ammonia and amines cartridge (K/P2, green filter), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.



8.2.3 Environmental exposure controls

Environmental exposure	Local authorities should be advised if significant spillages cannot be contained 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	Amine
Color	Clear - Blue
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	No information available	
pH @ dilution	6.5 - 8.5	(1% solution)
Melting / freezing point	No information available	
Boiling point/range	125 °C / 257 °F	
Flash point	> 99 °C / > 210 °F	PMCC
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	No information available	
Vapor density	No information available	
Specific gravity	1.1 sg	
Bulk density	No information available	
Relative 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	
log Pow	No information available	

Explosive properties
Oxidizing properties

Not applicable
None known.

9.2 Other information

Pour point

No information available

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 heat, flames and other sources of ignition. Ammonia or amines may be released when this component is heated or exposed to high pH.

10.5 Incompatible materials

Oxidizing agents. Acids. Bases.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation

Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact

May cause slight irritation.

Skin contact

Prolonged contact may cause redness and irritation.

Ingestion

Ingestion may cause stomach discomfort.

Unknown acute toxicity

Not applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.

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. (ECHA data) (PRODUCT).

12.3 Bioaccumulative potential

Bioaccumulation is unlikely. (ECHA data) (PRODUCT).

12.4 Mobility in soil

Mobility

Soluble in 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.

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.

EWC Waste Disposal No

According to the European Waste Catalog, Waste Codes are not product specific, but application specific Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99.

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

Australian Standard for the Uniform Scheduling of Drugs and Poisons

New Zealand hazard classification Not classified.

HSNO approval no. Not required.

Group number Not required.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

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
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

Europe - REACH

All products supplied from the European Economic Area (EEA) are compliant with the REACH Regulation EC 1907/2006. For products supplied from the EEA, Schlumberger and/or its suppliers have pre-registered and is registering all of the substances that

it and/or its suppliers manufactures in or imports into the EEA that are subject to Title II of the REACH Regulation. All products supplied from outside the EEA are subject to REACH only if imported into the EEA. The importer of the products must comply with REACH for each imported substance. Contact REACH@slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes date	24-Sep-2014
Revision date	14-Nov-2017
Version	5
This SDS has been revised in the following section(s)	All sections Product Code change No changes with regard to classification have been made.

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

This product is not classified as hazardous therefore no (H) hazard statements assigned.

*A mark of M-I L.L.C., a Schlumberger Company

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.

Safety Data Sheet RINGFREE*

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name RINGFREE*
Product code PID12240

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier

M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

MISDS@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

Classification according to (EC) No. 1272/2008

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 - EU (§28, 1272/2008)

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

-

Contains

Polymer

2.3 Other data

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

Component	EC-No.	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Polymer	Not Listed	Proprietary	30-60	-	Not classified	Exempt

Comments

The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First-Aid Measures

Inhalation

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

Ingestion

Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact

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

Eye contact

Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. 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.

Main 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 shall not be used for safety reasons

None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

None known.

Hazardous combustion products

Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. 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 materials 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. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from freezing.

Storage class Chemical storage.

Packaging material Use specially constructed containers only.

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component	EU OEL	Austria	Australia	Denmark
Polymer	Not determined	Not determined	Not determined	Not determined
Component	Malaysia	France	Germany	Hungary

Polymer	Not determined	Not determined	0.05 mg/m ³ TWA	Not determined
Component	New Zealand	Italy	Netherlands	Norway
Polymer	Not Determined	Not determined	Not determined	Not determined
Component	Poland	Portugal	Romania	Russia
Polymer	Not determined	Not determined	Not determined	Not determined
Component	Spain	Switzerland	Turkey	UK
Polymer	Not determined	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure

Ensure adequate ventilation. Local exhaust ventilation.

Personal protective equipment

Eye protection

Safety glasses with side-shields. Tightly fitting safety goggles.

Hand protection

Repeated or prolonged contact: Use protective gloves made of: Nitrile, 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, 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.



9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Odor	Slight
Color	Colorless - Pale Yellow
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	7-9	
pH @ dilution		
Melting/freezing point	< 0 °C / < 32 °F	
Boiling point/range	100 °C / 212 °F	
Flash point	Does not flash	
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	2.3 kPa	@ 20 °C
Vapor density	~ 0.8 g/l	
Specific gravity	1.3	@ 25 °C
Bulk density	10.8 lb/gal	
Relative 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	100-400 cP	@ 77 °C
Log Pow	~ 0	

Explosive properties Not Applicable
Oxidizing properties None known.

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) None
Density No information available

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. Protect from freezing.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polymer	> 40 g/kg (Rat)	No data available	No data available

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	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.

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. LC50 / 72 hrs: > 100 mg/l (estimated).

Toxicity to fish

This product is not considered toxic to fish. LC50 / 96 hrs: > 100 mg/l (estimated).

Toxicity to daphnia and other aquatic invertebrates

This product is not considered toxic to invertebrates. EC50 / 48 hrs: > 100 mg/l (estimated).

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Polymer	No information available	No information available	No information available

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

Log Pow

~ 0

12.4 Mobility in soil

Mobility

Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

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.

EWC Waste disposal No.

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application

for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99.

14. Transport information

14.1 UN Number

Not regulated

14.2 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 Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing group	Not regulated
IMDG Packing group	Not regulated
ICAO 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 MISDS@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

Germany, Water Endangering Classes (VwVwS)	Water endangering class = 1

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.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes date	27-Jun-2013
Revision date	21-Jul-2016
Version	4
The following sections have been revised:	SDS fully updated in the new database, No changes with regard to classification have been made, Updated according to GHS/CLP.

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

This product is not classified as hazardous therefore no (H) hazard statements assigned.

*A mark of M-I L.L.C., a Schlumberger Company

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.