



MATERIAL SAFETY DATA SHEET

MSDS NO. 10617

Trade Name: BARITE

Revision Date: 09/02/2004

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: BARITE
Chemical Family: Mixture
Product Use: Oil well drilling fluid additive.
Emergency Telephone (24 hr.): 281-561-1600

Supplied by: M-I L.L.C.
P.O. Box 42842
Houston, TX 77242
www.miswaco.com

Telephone Number: 281-561-1511
Contact Person: Catherine Miller, Product Safety Specialist

Revision Number: 3

HMIS Rating

Health: 1*

Flammability: 0

Physical Hazard: 0

PPE: E

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Barite	7727-43-7	91 - 93	No comments.
Silica, crystalline, quartz	14808-60-7	1 - 11	No comments.
Mica	12001-26-2	1 - 5	No comments.

3. HAZARDS IDENTIFICATION

Emergency Overview: Caution! May cause eye, skin, and respiratory tract irritation. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.

Canadian Classification:

UN PIN No: Not regulated

WHMIS Class: D2A

Physical State: Powder

Odor: Odorless

Color: Tan to grey

Potential Health Effects:

Acute Effects

Eye Contact: May cause mechanical irritation
Skin Contact: May cause mechanical irritation.
Inhalation: May cause mechanical irritation.
Ingestion: May cause gastric distress, nausea and vomiting if ingested.

Carcinogenicity & Chronic Effects:

See Section 11 - Toxicological Information.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10617

Trade Name: **BARITE**

Revision Date: 09/02/2004

Page 2/6

Routes of Exposure:
Target Organs/Medical
Conditions Aggravated by
Overexposure:

Eyes. Dermal (skin) contact. Inhalation.
Eyes. Skin. Respiratory System.

4. FIRST AID MEASURES

Eye Contact: 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.

Skin Contact: Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

General Notes: Persons seeking medical attention should carry a copy of this MSDS with them.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point: F (C): NA
Flammable Limits in Air - Lower (%): ND
Flammable Limits in Air - Upper (%): ND
Autoignition Temperature: F(C) ND
Flammability Class: NA
Other Flammable Properties: ND
Extinguishing Media: This material is not combustible. Use extinguishing media appropriate for surrounding fire.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Not determined.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment identified in Section 8.

Spill Procedures: Evacuate surrounding area, if necessary. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

Environmental Precautions: Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

7. HANDLING AND STORAGE

Handling: Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Use only in a well ventilated area. Wash thoroughly after handling.

Storage: Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10617

Trade Name: **BARITE**

Revision Date: 09/02/2004

Page 3/6

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Barite	7727-43-7	91 - 93	10 mg/m ³	15 mg/m ³ (total); 5 mg/m ³ (resp)	NA	None
Silica, crystalline, quartz	14808-60-7	1 - 11	0.05 mg/m ³	see Table Z-3	NIOSH: 0.05 mg/m ³ TWA (10H day/40H wk)	(R)
Mica	12001-26-2	1 - 5	3 mg/m ³	see Table Z-3	NA	None

Notes

(R) Respirable fraction (ACGIH);

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m³ / (%SiO₂+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

Engineering Controls: Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

Personal Protection Equipment

Eye/Face Protection: Dust resistant safety goggles.

Skin Protection: Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Neoprene. Nitrile.

Respiratory Protection: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator (dusk mask).
In work environments containing oil mist/aerosol, use at least NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.
For exposure exceeding 10 x PEL use a NIOSH-approved N100 Particulate Respirator.

General Hygiene Considerations: Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Tan to grey
Odor: Odorless
Physical State: Powder
pH: ND
Specific Gravity (H₂O = 1): 4.20 - 4.25 at 68F (20C)
Solubility (Water): Insoluble
Melting/Freezing Point: 2876F (1580C)
Boiling Point: ND
Vapor Pressure: ND
Vapor Density (Air=1): ND
Evaporation Rate: ND
Odor Threshold(s): ND

MATERIAL SAFETY DATA SHEET

Trade Name: **BARITE**

MSDS NO. 10617

Revision Date: 09/02/2004

Page 4/6

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	Not determined.
Hazardous Decomposition Products:	None known
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Component Toxicological Data: Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	Component Toxicological Summary
Silica, crystalline, quartz	Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)
Mica	Studies of workers with long term exposure to mica dust indicated a higher incidence of pneumoconiosis ("dusty lung" disease). Symptoms of pneumoconiosis may include chronic cough, dyspnea (shortness of breath) and fatigue. (HSDB)

Product Toxicological Information:

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

12. ECOLOGICAL INFORMATION

Product Ecotoxicity Data:	Contact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegradation:	ND
Bioaccumulation:	ND
Octanol/Water Partition Coefficient:	ND

13. DISPOSAL CONSIDERATIONS

Waste Classification:	ND
Waste Management:	Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10617

Trade Name: **BARITE**

Revision Date: 09/02/2004

Page 5/6

Disposal Method:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

Canada TDG Shipping Description:

Not regulated.

UN PIN No:

Not regulated

IMDG Shipping Description:

Not regulated.

ICAO/IATA Shipping Description:

Not regulated.

15. REGULATORY INFORMATION

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories: Delayed (chronic) health hazard.

SARA 302/304, 313; CERCLA RQ, California Proposition 65: Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz	---	---	---	X	---	---	---

International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
European Union EINECS - Components are listed or exempt from listing.
Japan METI ENCS - Components are listed or exempt from listing.
Korea TCCL ECL - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class:

D2A

16. OTHER INFORMATION

The following sections have been revised: 1, 3, 5, 9, 10, 11, 12, 14, 15, 16

NA - Not Applicable, ND - Not Determined.

MATERIAL SAFETY DATA SHEET

Trade Name: **BARITE**

MSDS NO. 10617

Revision Date: 09/02/2004

Page 6/6

Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET
BENTONITE**1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

PRODUCT NAME BENTONITE
APPLICATION Viscosifier.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
BENTONITE	215-108-5	1302-78-9	80 - 95%	-
QUARTZ, CRYSTALLINE SILICA	238-878-4	14808-60-7	2 -15%	Xn;R20.

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

This material is a naturally occurring mineral. The Data Shown is in accordance with the latest EC Directives. This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the maximum exposure limit may lead to chronic lung disease such as silicosis.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

HUMAN HEALTH

This product contains a small quantity of quartz. 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 1.

4 FIRST-AID MEASURES**INHALATION**

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

UNUSUAL FIRE & EXPLOSION HAZARDS

No unusual fire or explosion hazards noted.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

BENTONITE**SPILL CLEAN UP METHODS**

Shovel into dry containers. Cover and move the containers. Flush the area with water. May be slippery when wet.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid handling which leads to dust formation. Provide good ventilation. Mechanical ventilation or local exhaust ventilation may be required.

STORAGE PRECAUTIONS

Store at moderate temperatures in dry, well ventilated area.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
QUARTZ, CRYSTALLINE SILICA	WEL		0.3 mg/m3 resp. dust		
BENTONITE			4 mg/m3 resp. dust		

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits * OSHA PELs for Mineral Dusts containing crystalline silica are 10 mg/m3 / (%SiO₂+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite. NUI = Nuisance Dust. WEL TWA 4mg/m3 respirable dust, 10mg/m3 total dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection must be used if air contamination exceeds acceptable level. Dust filter P3 (for especially fine dust/powder).

HAND PROTECTION

No specific hand protection noted, but gloves may still be advisable. For prolonged or repeated skin contact use suitable protective gloves. Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	Cream to Grey		
ODOUR	Odourless		
SOLUBILITY	Insoluble in water		
RELATIVE DENSITY	2.3 - 2.6 20	BULK DENSITY	769 - 833 kg/m3
pH-VALUE, CONC. SOLUTION	9 - 10		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid wet and humid conditions.

MATERIALS TO AVOID

No incompatible materials noted.

HAZARDOUS DECOMPOSITION PRODUCTS

No specific hazardous decomposition products noted.

11 TOXICOLOGICAL INFORMATION**INHALATION**

Dust may irritate respiratory system or lungs. Harmful: danger of serious damage to health by prolonged exposure through inhalation.

INGESTION

May cause discomfort if swallowed.

BENTONITE**SKIN CONTACT**

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

HEALTH WARNINGS

This product contains small quantities of quartz. Prolonged inhalation of high concentrations may damage respiratory system. Because of quantity and composition, the health hazard is small.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Not regarded as dangerous for the environment. Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
---------	---

15 REGULATORY INFORMATION**RISK PHRASES**

NC	Not classified.
----	-----------------

SAFETY PHRASES

NC	Not classified.
----	-----------------

UK REGULATORY REFERENCES

The Control of Substances Hazardous to Health Regulations 1988. Chemicals (Hazard Information & Packaging) Regulations. IARC Monographs, Vol.68, 1997.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 1 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Transport of Dangerous Goods, Model Regulations, Tenth Revised Edition, United Nations.

REVISION COMMENTS

The following sections have been revised: 5, 6, 7, 8, 13, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE	23-09-05
---------------	----------

REV. NO./REPL. SDS GENERATED	2
------------------------------	---

SDS NO.	10609
---------	-------

RISK PHRASES IN FULL

R20	Harmful by inhalation.
-----	------------------------

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

CAUSTIC SODA SOLID

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME CAUSTIC SODA SOLID

SYNONYMS, TRADE NAMES SODIUM HYDROXIDE SOLID

APPLICATION pH modifier.

SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119

EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
SODIUM HYDROXIDE SOLID	215-185-5	1310-73-2	60-100%	C;R35

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The Data Shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Causes severe burns.

CLASSIFICATION C;R35.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Keep the affected person warm and at rest. Get prompt medical attention.

INGESTION

DO NOT INDUCE VOMITING! Promptly get affected person to drink large volumes of water to dilute the swallowed chemical. Get medical attention immediately!

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Important! Immediately rinse with water for at least 15 minutes. Hold eyelids apart. Get medical attention immediately. Continue to rinse.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

DO NOT use water if avoidable. Use fire-extinguishing media appropriate for surrounding materials.

UNUSUAL FIRE & EXPLOSION HAZARDS

May develop highly toxic or corrosive fumes if heated.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Shovel into dry containers. Cover and move the containers. Flush the area with water.

CAUSTIC SODA SOLID**7 HANDLING AND STORAGE****USAGE PRECAUTIONS**

Do not use contact lenses. Provide good ventilation. Avoid spilling, skin and eye contact. Avoid spread of dust.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place. Empty containers retain residues. All labeled precautions must be observed.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
SODIUM HYDROXIDE SOLID	WEL				2 mg/m3

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection must be used if the general level exceeds the Recommended Workplace Exposure Limit. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Impermeable material. such as, Rubber, neoprene or PVC.

EYE PROTECTION

Contact lenses should not be worn when working with this chemical! Wear dust resistant safety goggles where there is danger of eye contact. Face shield for protection of facial skin is also recommended.

OTHER PROTECTION

Chemical resistant clothing or aprons must be worn to prevent any risk of skin contact Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Pellets or Solid.		
COLOUR	White		
ODOUR	Odourless		
MOL. WEIGHT	40.01	BOILING POINT (°C)	~1390 760 mm Hg
MELTING POINT (°C)	~317	RELATIVE DENSITY	2.13 @ 25°C
pH-VALUE, DILUTED SOLUTION	14 @ 1%	SOLUBILITY VALUE (g/100g H ₂ O@ 20°C)	50.0

10 STABILITY AND REACTIVITY**STABILITY**

Unstable. Hygroscopic. May generate heat and boil over when in contact with water.

CONDITIONS TO AVOID

Long storage & large quantities. and Water, moisture.

MATERIALS TO AVOID

Strong acids. Hydrocarbons - halogenated. and Flammable/combustible material. Aluminium, brass, tin and zinc are readily attacked by caustic soda. Can also react violently or explosively with many organic chemicals, particularly chlorinated hydrocarbons.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 500 mg/kg (oral-rbt)

INHALATION

Severely irritating to the respiratory tract if inhaled. Higher exposures may cause pulmonary oedema.

INGESTION

May cause burns in mucous membranes, throat, oesophagus and stomach. Lethal dose for a man is approx. 5g.

SKIN CONTACT

Contact with concentrated chemical may cause severe skin damage.

EYE CONTACT

May cause chemical eye burns. Contact with concentrated chemical may very rapidly cause severe eye damage, possibly loss of sight.

CAUSTIC SODA SOLID**12 ECOLOGICAL INFORMATION****ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements. This material and its container must be disposed of as hazardous waste.

14 TRANSPORT INFORMATION

UK ROAD CLASS	8		
PROPER SHIPPING NAME	SODIUM HYDROXIDE, SOLID		
UN NO. ROAD	1823	UK ROAD PACK GR.	II
ADR CLASS NO.	8	ADR CLASS	Class 8: Corrosive substances.
ADR PACK GROUP	II	HAZARD No. (ADR)	80
HAZCHEM CODE	2W	CEFIC TEC(R) NO.	80GC6-II+III
RID CLASS NO.	8	RID PACK GROUP	II
UN NO. SEA	1823	IMDG CLASS	8
EMS	F-A, S-B	MARINE POLLUTANT	No.
UN NO. AIR	1823	ICAO CLASS	8
AIR PACK GR.	II		

15 REGULATORY INFORMATION**LABELLING**

Corrosive

CONTAINS

SODIUM HYDROXIDE SOLID

RISK PHRASES

R35 Causes severe burns.

SAFETY PHRASES

S24/25 Avoid contact with skin and eyes.
 S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
 S60 This material and its container must be disposed of as hazardous waste.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 3 HMIS Flammability - 0 HMIS Physical Hazard - 1

INFORMATION SOURCES

Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.). Material Safety Data Sheet, Misc. manufacturers.

CAUSTIC SODA SOLID

REVISION COMMENTS

The following sections have been revised: 4, 5, 6, 7, 8, 10, 11, 12, 13 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE 13-10-05

REV. NO./REPL. SDS GENERATED 2

SDS NO. 10927

RISK PHRASES IN FULL

R35 Causes severe burns.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET
CITRIC ACID**1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

PRODUCT NAME CITRIC ACID
APPLICATION Oil well drilling fluid additive. pH modifier.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
CITRIC ACID	201-069-1	77-92-9	60-100%	Xi;R36.

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Irritating to eyes.

CLASSIFICATION Xi;R36.

4 FIRST-AID MEASURES**INHALATION**

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

Water spray, foam, dry powder or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS

High concentrations of dust may form explosive mixture with air.

SPECIFIC HAZARDS

Fire or high temperatures create: Carbon dioxide (CO₂). and Carbon monoxide (CO).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

CITRIC ACID**6 ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Do not use contact lenses. Provide good ventilation. Mechanical ventilation or local exhaust ventilation may be required. Avoid handling which leads to dust formation.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
CITRIC ACID	WEL		4 mg/m3 resp.dust		

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection must be used if air contamination exceeds acceptable level. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Butyl rubber. or Polyvinyl chloride (PVC).

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Crystals or crystalline		
COLOUR	White		
ODOUR	Odourless		
SOLUBILITY	Completely soluble in water		
MELTING POINT (°C)	~135°C	RELATIVE DENSITY	1.542 g/cm3 @ 20 °c
BULK DENSITY	850 kg/m3	pH-VALUE, DILUTED SOLUTION	1.6 (100g/l) @20°C

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CITRIC ACID**MATERIALS TO AVOID**

Strong alkalis. and Strong oxidising agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Carbon dioxide (CO₂). and Carbon monoxide (CO).

11 TOXICOLOGICAL INFORMATION**INHALATION**

Dust may irritate respiratory system or lungs.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting. May cause severe irritation to eyes.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**LABELLING**

Irritant

RISK PHRASES

R36 Irritating to eyes.

SAFETY PHRASES

S24/25 Avoid contact with skin and eyes.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 2 HMIS Flammability - 1 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

CITRIC ACID

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s).

REVISION COMMENTS

General revision. Revised by Bill Cameron

ISSUED BY

Dr. Kirsty Walker

REVISION DATE 27-09-06

REV. NO./REPL. SDS GENERATED 3

SDS NO. 10910

RISK PHRASES IN FULL

R36 Irritating to eyes.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

**SAFETY DATA SHEET**
CONQOR 404 NS**1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

APPLICATION	Corrosion inhibitor
SUPPLIER	M-I SWACO A Schlumberger Company Endeavour Drive Arnhall Business Park, Westhill Aberdeen AB32 6UF Scotland UK T = +44 (0)1224-742200 F = +44 (0)1224-742288 E-mail = MBXMSDS-EH@miswaco.slb.com
EMERGENCY TELEPHONE	(24 Hour) Europe +44 (0) 1235 239 670, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Middle East and Africa +44 (0) 1235 239 671, Australia +61 2801 44558.

2 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

CLASSIFICATION (1999/45) Not classified.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content %	Classification (67/548/EEC)
SALTS OF PHOSPHATE ESTERS IN WATER			60-100%	-

The Full Text for all R-Phrases is Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

4 FIRST-AID MEASURES**INHALATION**

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

INGESTION

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

Foam, carbon dioxide or dry powder.

SPECIAL FIRE FIGHTING PROCEDURES

Containers close to fire should be removed immediately or cooled with water.

SPECIFIC HAZARDS

Fire or high temperatures create: Vapours/gases/fumes of: Carbon dioxide (CO₂). Carbon monoxide (CO). Oxides of: Potassium. and Phosphorus.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

CONQOR 404 NS

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Stop leak if possible without risk. Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Avoid spilling, skin and eye contact.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry, cool and well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT COMMENTS

No exposure limits noted for ingredient(s).

PROTECTIVE EQUIPMENT



ENGINEERING MEASURES

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Chemical respirator with organic vapour cartridge.

HAND PROTECTION

For prolonged or repeated skin contact use suitable protective gloves. Neoprene. or Nitrile gloves are recommended.

EYE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

OTHER PROTECTION

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid
COLOUR	Clear Yellow
ODOUR	Odourless
SOLUBILITY	Soluble in water.
RELATIVE DENSITY	1.384 - 1.396 s.g @ 60°F
BULK DENSITY	11.53 - 11.63 lbs/gal
VAPOUR DENSITY (air=1)	> 1
pH-VALUE, CONC. SOLUTION	7 - 8.5
VISCOSITY	19 - 21 @ 38 °C
FLASH POINT (°C)	>93.3°C (200°F)
POUR POINT (°C)	-20°C (-4°F)

10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition.

MATERIALS TO AVOID

Avoid contact with: Strong oxidising agents.

CONQOR 404 NS**HAZARDOUS DECOMPOSITION PRODUCTS**

Fire or high temperatures create: Vapours/gases/fumes of: Carbon monoxide (CO). Carbon dioxide (CO₂). Oxides of: Phosphorus. and Potassium.

11 TOXICOLOGICAL INFORMATION**INHALATION**

Gas or vapour in high concentrations may irritate respiratory system.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Prolonged and frequent contact may cause redness and irritation.

EYE CONTACT

Spray and vapour in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.com.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

NC

Not classified.

SAFETY PHRASES

NC

Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU DIRECTIVES

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

INTERNATIONAL CHEMICAL INVENTORIES

Contact REACH@miswaco.com for REACH information. Complies with the following national/regional chemical inventory requirements: EINECS / ELINCS,

16 OTHER INFORMATION**INFORMATION SOURCES**

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

REVISION COMMENTS

General revision. Compiled or revised by Sandra McWilliam

ISSUED BY

Bill Cameron

REVISION DATE

26-01-11

REV. NO./REPL. SDS GENERATED

6

SDS NO.

10195

RISK PHRASES IN FULL

NC

Not classified.

CONQOR 404 NS**DISCLAIMER**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

**SAFETY DATA SHEET
CONQOR 404****1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

PRODUCT NAME CONQOR 404
APPLICATION Corrosion inhibitor
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
SALTS OF PHOSPHATE ESTERS IN WATER			60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

This product is classified as containing no hazardous ingredients according to the EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES**INHALATION**

Remove victim immediately from source of exposure. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

INGESTION

Do not induce vomiting. Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

SPECIFIC HAZARDS

Fire or high temperatures create: Vapours/gases/fumes of: Carbon dioxide (CO₂). Carbon monoxide (CO). and Oxides of: Phosphorus.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

CONQOR 404**SPILL CLEAN UP METHODS**

Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid spilling, skin and eye contact. Provide good ventilation. Do not use contact lenses.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**PROTECTIVE EQUIPMENT****ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Wear mask supplied with: Gas cartridge suitable for organic substances.

HAND PROTECTION

Use protective gloves made of: Rubber, neoprene or PVC.

EYE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid		
COLOUR	Yellow Brown		
ODOUR	No characteristic odour.		
SOLUBILITY	Soluble in water.		
MELTING POINT (°C)	< -10	RELATIVE DENSITY	1.3 - 1.4
VAPOUR PRESSURE	25 mbar @ 20°C	pH-VALUE, DILUTED SOLUTION	7.0 50g/l water
VISCOSITY	< 10 cSt @ 38 °c		

10 STABILITY AND REACTIVITY**STABILITY**

No particular stability concerns.

HAZARDOUS POLYMERISATION

Will not polymerise.

MATERIALS TO AVOID

Strong oxidising agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Vapours/gases/fumes of: and Oxides of: Phosphorus.

11 TOXICOLOGICAL INFORMATION**INHALATION**

Gas or vapour in high concentrations may irritate respiratory system.

INGESTION

May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Prolonged contact may cause dryness of the skin. May be irritating to the skin.

CONQOR 404**EYE CONTACT**

Spray and vapour in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
---------	---

15 REGULATORY INFORMATION**RISK PHRASES**

NC	Not classified.
----	-----------------

SAFETY PHRASES

NC	Not classified.
----	-----------------

UK REGULATORY REFERENCES

The Control of Substances Hazardous to Health Regulations Chemicals (Hazard Information & Packaging) Regulations.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 1 HMIS Physical Hazard - 0 J - Splash Goggles, Gloves, Synthetic Apron, Dust and Vapor Respirator.

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s).

REVISION COMMENTS

General revision. Revised by Bill Cameron

ISSUED BY

Bill Cameron

REVISION DATE	16-02-06
---------------	----------

REV. NO./REPL. SDS GENERATED	4
------------------------------	---

SDS NO.	10195
---------	-------

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET

DRILLING STARCH

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME: DRILLING STARCH

APPLICATIONS: Fluid Loss reducer

SUPPLIER: M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
Tel: 44 (0)1224 - 584336
Fax: 44 (0)1224 - 576119

EMERGENCY TELEPHONES: 001 281 561 1600 (USA)

2. COMPOSITION/INFORMATION ON INGREDIENTS

GROSS FORMULA: Potato starch

COMPOSITION COMMENTS: This product is classified as containing no hazardous ingredients according to the EC Directives.

3. HAZARDS IDENTIFICATION

Not regarded as a health hazard under current legislation.

4. FIRST AID MEASURES

INHALATION: Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION: First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES:	Use supplied air respirator if substance is involved in a fire.
UNUSUAL FIRE & EXPLOSION HAZARDS:	High concentrations of dust may form explosive mixture with air.
HAZARDOUS COMBUSTION PRODUCTS:	Asphyxiating gases/vapors/fumes of: Carbon dioxide (CO ₂). Carbon monoxide (CO).

6. ACCIDENTAL RELEASE MEASURES

Spill Cleanup Methods:	Collect in containers and seal securely. Flush clean with lots of water. Be aware of potential for surfaces to become slippery. Avoid generation and spreading of dust. Wear necessary protective equipment.
-------------------------------	--

7. HANDLING AND STORAGE

Usage Precautions:	Avoid handling which leads to dust formation. Provide good ventilation.
Storage Precautions:	Store at moderate temperatures in dry, well ventilated area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ingredient Comments:	This material is considered a nuisance dust, OES TWA 4mg/m ³ Respirable Dust, 10 mg/m ³ Total Dust.
-----------------------------	---

Protective Equipment:



Ventilation:	Provide adequate general and local exhaust ventilation.
Respirators:	Respiratory protection must be used if air concentration exceeds acceptable level. Dust filter P2 (for fine dust).
Protective Gloves:	No specific hand protection noted, but gloves may still be advisable. For prolonged or repeated skin contact use suitable protective gloves. Rubber or plastic.
Eye Protection:	Wear dust resistant safety goggles where there is danger of eye contact.
Other Protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder, dust.
Colour:	Off-white.
Odour/Taste:	No characteristic odour.

BULK DENSITY:	0.3 - 0.7 g/cm3		
pH-VALUE, DILUTED SOLUTION:	6.0 - 8.0	Concentration %M:	1%
SOLUBILITY DESCRIPTION:	Soluble in water. Forms a paste at concentrations greater than 5%.		
DECOMPOSITION TEMP. (°C):	300		
AUTO IGNITION TEMP. (°C):	430		

10. STABILITY AND REACTIVITY

STABILITY:	Normally stable.
CONDITIONS TO AVOID:	Avoid wet and humid conditions.
MATERIALS TO AVOID:	Strong oxidizing agents.
HAZARDOUS DECOMP. PRODUCTS:	Fire or high temperatures create: Asphyxiating gases/vapours/fumes of: Carbon dioxide (CO ₂). Carbon monoxide (CO).

11. TOXICOLOGICAL INFORMATION

INHALATION:	Dust may irritate respiratory system or lungs.
INGESTION:	May cause discomfort if swallowed.
SKIN:	Powder may irritate skin.
EYES:	Particles in the eyes may cause irritation and smarting.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:	Not regarded as dangerous for the environment.
--------------------------------	--

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:	Recover and reclaim or recycle, if practical. Dispose of on site landfill area. Dispose of in accordance with Local Authority requirements.
--------------------------	---

14. TRANSPORT INFORMATION

ROAD TRANSPORT NOTES:	Not classified for road transport.
RAIL TRANSPORT NOTES:	Not classified for rail transport.
SEA TRANSPORT NOTES:	Not classified for sea transport.
AIR TRANSPORT NOTES:	Not classified for air transport.

15. REGULATORY INFORMATION

RISK PHRASES: Not classified.

SAFETY PHRASES: Not classified.

16. OTHER INFORMATION

INFORMATION SOURCES: Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).

ISSUED BY: Sarah Glover

REVISION DATE: 02-04-03

REV. No./REPL. SDS GENERATED: 1

PRINTING DATE: 2003-04-02

DISCLAIMER: MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



MATERIAL SAFETY DATA SHEET

MSDS NO. 10034

Trade Name: DUO-VIS*

Revision Date: 07/20/2004

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: DUO-VIS*
Chemical Family: Mixture
Product Use: Oil well drilling fluid additive.
Emergency Telephone (24 hr.): 281-561-1600

Supplied by: M-I L.L.C.
P.O. Box 42842
Houston, TX 77242
www.miswaco.com

Telephone Number: 281-561-1511
Contact Person: Catherine Miller, Product Safety Specialist

Revision Number: 3

HMIS Rating

Health: 2

Flammability: 1

Physical Hazard: 0

PPE: E

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Xanthan gum	11138-66-2	99 - 99.9	No comments.
Glyoxal	107-22-2	0.1 - 1	No comments.

3. HAZARDS IDENTIFICATION

Emergency Overview: Warning! May cause eye, skin, and respiratory tract irritation. May cause skin sensitization, an allergic reaction, on repeated exposure. Long term inhalation of particulates may cause lung damage.

Canadian Classification:

UN PIN No: Not regulated

WHMIS Class: D2B

Physical State: Powder

Odor: Slight.

Color: White to Tan.

Potential Health Effects:

Acute Effects

Eye Contact: May irritate eyes.
Skin Contact: May be irritating to the skin. May cause skin sensitization, an allergic reaction, on repeated exposure.
Inhalation: May be irritating to the respiratory tract. Long term inhalation of particulate may cause lung damage.
Ingestion: May cause gastric distress, nausea and vomiting if ingested.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10034

Trade Name: DUO-VIS*

Revision Date: 07/20/2004

Page 2/5

Carcinogenicity & Chronic Effects:

See Section 11 - Toxicological Information.

Routes of Exposure:

Eyes. Dermal (skin) contact. Inhalation.

Target Organs/Medical

Eyes. Skin. Respiratory System.

Conditions Aggravated by

Overexposure:

4. FIRST AID MEASURES

Eye Contact:

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.

Skin Contact:

Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

Inhalation:

Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

General Notes:

Persons seeking medical attention should carry a copy of this MSDS with them.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point: F (C):

NA

Flammable Limits in Air - Lower (%):

ND

Flammable Limits in Air - Upper (%):

ND

Autoignition Temperature: F(C)

ND

Flammability Class:

ND

Other Flammable Properties:

Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air.

Extinguishing Media:

Use extinguishing media appropriate for surrounding fire.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Use personal protective equipment identified in Section 8.

Spill Procedures:

Evacuate surrounding area, if necessary. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

Environmental Precautions:

Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

7. HANDLING AND STORAGE

Handling:

Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.

MATERIAL SAFETY DATA SHEET

Trade Name: **DUO-VIS***

Revision Date: 07/20/2004

MSDS NO. 10034

Page 3/5

Storage:

Store at room temperature in dry, well ventilated area. Keep in original container.
Keep container closed. Store away from incompatibles.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Xanthan gum	11138-66-2	99 - 99.9	NA	NA	NA	(1)
Glyoxal	107-22-2	0.1 - 1	0.1 mg/m ³ (Sens)	NA	NA	None

Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

Engineering Controls: Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

Personal Protection Equipment

Eye/Face Protection: Dust resistant safety goggles.

Skin Protection: Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Neoprene. Nitrile.

Respiratory Protection: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator (dusk mask).
In work environments containing oil mist/aerosol, use at least NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.
For exposure exceeding 10 x PEL use a NIOSH-approved N100 Particulate Respirator.

General Hygiene Considerations: Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	White to Tan.
Odor:	Slight.
Physical State:	Powder
pH:	5.4 - 8.6
Specific Gravity (H ₂ O = 1):	1.5 g/cc
Solubility (Water):	Soluble.
Melting/Freezing Point:	ND
Boiling Point:	ND
Vapor Pressure:	NA
Vapor Density (Air=1):	NA
Evaporation Rate:	ND
Odor Threshold(s):	ND

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	Strong oxidizing agents.

MATERIAL SAFETY DATA SHEET

Trade Name: DUO-VIS*

Revision Date: 07/20/2004

Page 4/5

MSDS NO. 10034

Hazardous Decomposition Products:

For thermal decomposition products, see Section 5.

Hazardous Polymerization:

Will not occur

11. TOXICOLOGICAL INFORMATION

Component Toxicological Data: Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Xanthan gum	11138-66-2	Oral LD50: > 5,000 mg/kg (rat)
Glyoxal	107-22-2	Oral LD50: 200 mg/kg (rat); Dermal LD50: 10 ml/kg (rabbit)

Product Toxicological Information:

No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

Ingredient	CAS No.	Data
Xanthan gum	11138-66-2	LC50 96H: 490 mg/l (rainbow trout); LC50 48H: 980 mg/l (Daphnia magna)
Glyoxal	107-22-2	LC50 96H static: 215,000 ug/l (Pimephales promelas (fathead minnow)); EC50 96H static: 66,480 - 148,960 ug/l (Selenastrum capricornutum (green algae))

Product Ecotoxicity Data:

Contact M-I Environmental Affairs Department for available product ecotoxicity data.

Biodegradation:

ND

Bioaccumulation:

ND

Octanol/Water Partition

ND

Coefficient:

13. DISPOSAL CONSIDERATIONS

Waste Classification:

This product does not meet the criteria of a hazardous waste if discarded in its purchased form.

Waste Management:

Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

Disposal Method:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

U.S. DOT Shipping Description:

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

Canada TDG Shipping Description:

Not regulated.

UN PIN No:

Not regulated

IMDG Shipping Description:

Not regulated.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10034

Trade Name: DUO-VIS*

Revision Date: 07/20/2004

Page 5/5

ICAO/IATA Shipping Description:

Not regulated.

15. REGULATORY INFORMATION

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories: Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, California Proposition 65: Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
European Union EINECS - Components are listed or exempt from listing.
Japan METI ENCS - Components are listed or exempt from listing.
Korea TCCL ECL - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class:

D2B

16. OTHER INFORMATION

The following sections have been revised: 1, 3, 10, 14, 15, 16

NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DYNARED™ (Seepage Control Fiber)

Product Use: Drilling Fluid Additive

Product Number(s): 0001016829, 0001016828, 0001016830

Synonyms: DYNARED™ Fine; DYNARED™ Medium; DYNARED™ Coarse

Product CAS No.: Mixture

Company Identification:

Chevron Phillips Chemical Company LP
Drilling Specialties Company
10001Six Pines Drive
The Woodlands, TX 77380

Product Information:

MSDS Requests: (800) 852-5530
Technical Information: (800) 221-1956
Responsible Party: Product Safety Group
Email: msds@cpchem.com

Chevron Phillips Chemicals International N.V.
Brusselsesteenweg 355
B-3090 Overijse
Belgium

24-Hour Emergency Telephone Numbers

HEALTH: Chevron Phillips Emergency Information Center 866.442.9628 (North America) and 1.832.813.4984 (International)

TRANSPORTATION: North America: CHEMTREC 800.424.9300 or 703.527.3887
ASIA: +1.703.527.3887
EUROPE: BIG .32.14.584545 (phone) or .32.14.583516 (telefax)
SOUTH AMERICA SOS-Cotec Inside Brazil: 0800.111.767
Outside Brazil: 55.19.3467.1600

SECTION 2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Reddish-brown powder with mild, earthy odor.

NFPA RATINGS: **Health:** 0 **Flammability:** 0 **Reactivity:** 0

GHS Classification and Labeling:

Not hazardous. No hazards have been determined using GHS criteria.

EU Classification:

Safety Phrases:

S22: Do not breathe dust.

IMMEDIATE HEALTH EFFECTS:

Eye: Not expected to cause prolonged or significant eye irritation. Material is dusty and may scratch the surface of the eye.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: The dust from this material may cause respiratory irritation.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	AMOUNT	EINECS / ELINCS	SYM	R-PHRASES
Proprietary		100 % weight	Exempt	NA	NA

Occupational Exposure Limits:

Component	Limit	TWA	STEL	Ceiling / Peak	Notation
Proprietary	CPCHEM	Not Established	NA	NA	NA

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with running water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.

Skin: To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. Get medical attention if any symptoms develop.

Ingestion: If swallowed, do not induce vomiting. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

Classification (29 CFR 1910.1200): Not flammable or combustible. This material will burn although it is not easily ignited.

NFPA RATINGS: Health: 0 Flammability: 0 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: NA

Autoignition: NA

Flammability (Explosive) Limits (% by volume in air): Lower: NA Upper: NA

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: Material will not burn unless preheated. Clear fire area of all non-emergency personnel. Only enter confined fire space with full gear, including a positive pressure, NIOSH-approved,

self-contained breathing apparatus. Cool surrounding equipment, fire-exposed containers and structures with water. Container areas exposed to direct flame contact should be cooled with large quantities of water (500 gallons water per minute flame impingement exposure) to prevent weakening of container structure.

Combustion Products: No data available.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management: Reduce airborne dust and prevent scattering by moistening with water.

Reporting: U.S.A. regulations may require reporting spills of this material that could reach any surface waters. Report spills to local authorities and/or the National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL . REFER TO PRODUCT LABEL OR MANUFACTURERS TECHNICAL BULLETINS FOR THE PROPER USE AND HANDLING OF THIS MATERIAL .

Precautionary Measures: Use caution to avoid creation of dusts and to prevent inhalation of product dust (fines). Avoid contact with product dust. Airborne dust concentrations above 20 mg/L may create a dust explosion hazard. Avoid breathing vapors or fumes which may be released during thermal processing. Do not breathe dust at levels above the recommended exposure limits. Avoid breathing material. Keep container closed. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Discard contaminated clothing and shoes or thoroughly clean before reuse. Do not breathe dust. Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations, which have the potential of generating an accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids, National Fire Protection Association (NFPA 77), Recommended Practice on Static Electricity' (liquids, powders and dusts), and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents' (liquids).

General Storage Information: Treat as a solid that can burn. Store away from oxidizing materials, in a cool, dry place with adequate ventilation. Bond and ground transfer equipment. DO NOT USE OR STORE near heat, sparks or open flames. USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

Container Warnings: Containers, even those that have been emptied, can contain residues of dusts or solid particulates which may create both health and fire/explosion hazards.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), 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.

ENGINEERING CONTROLS:

If heated material generates vapor or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure.

PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face Protection: Wear eye protection such as safety glasses, chemical goggles, or faceshields if engineering controls or work practices are not adequate to prevent eye contact. No special eye protection is normally required. If operating conditions create dust that is not adequately controlled, wear appropriate goggles.

Skin Protection: Wear impervious protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Users should determine acceptable performance characteristics of protective clothing. Consider physical requirements and other substances present when selecting protective clothing. Suggested materials for protective gloves include: Nitrile

Respiratory Protection: If user operations generate harmful levels of airborne material that is not adequately controlled by ventilation, wear a NIOSH approved respirator that provides adequate protection. Use the following elements for air-purifying respirators: Air-Purifying Respirator for Particulates (HEPA)

Occupational Exposure Limits:

Component	Limit	TWA	STEL	Ceiling / Peak	Notation
Proprietary	CPCHEM	Not Established	NA	NA	NA

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Reddish-brown powder with mild, earthy odor.

Autoignition: NA

Boiling Point: NA

Evaporation Rate: NDA

Flammability (Explosive) Limits (% by volume in air): Lower: NA Upper: NA

Flashpoint: NA

Molecular Formula: NA

Molecular Weight: NDA

Melting Point: NA

Octanol / Water Partition Coefficient: log-Kow: NDA

pH: NA

Pour Point : NA

Solubility (in water): Slight

Vapor Pressure: NA

Vapor Density (AIR=1): NA

Viscosity: NA

Percent Volatile: NDA

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Conditions to Avoid: Not Applicable

Incompatibility With Other Materials: No data available

Hazardous Decomposition Products: None.

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS:

Acute Oral Toxicity: LD50 / not known

Acute Dermal Toxicity: LD50 / not known

Acute Inhalation Toxicity: LC50 / not known

Eye Irritation: This material is not expected to be irritating to the eyes.

Skin Irritation: This material is not expected to be irritating to the skin.

ADDITIONAL TOXICOLOGY INFORMATION:

The toxicological properties of this product have not been tested or have not been tested completely and its handling or use may be hazardous. EXERCISE DUE CARE.

Long-term exposure to high dust concentrations may cause non-debilitating lung changes.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is not expected to be harmful to aquatic organisms.

ENVIRONMENTAL FATE:

This material is expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

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.

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 MSDS and the bill of lading.

Shipping Descriptions per regulatory authority.

US DOT

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR
TRANSPORTATION

ICAO / IATA

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR
TRANSPORTATION

IMO / IMDG

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR
TRANSPORTATION

RID / ADR

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR
TRANSPORTATION

SECTION 15 REGULATORY INFORMATION
--

SARA 311/312 CATEGORIES:

- | | |
|---------------------------------------|----|
| 1. Immediate (Acute) Health Effects: | NO |
| 2. Delayed (Chronic) Health Effects: | NO |
| 3. Fire Hazard: | NO |
| 4. Sudden Release of Pressure Hazard: | NO |
| 5. Reactivity Hazard: | NO |

REGULATORY LISTS SEARCHED:

- | | | |
|----------------------------|----------------------------|-------------------------------|
| 01= CA Prop 65 | 17 = FDA 178 | 33 = RCRA Waste Appendix VIII |
| 02 = LA RTK | 18 = FDA 179 | 34 = RCRA Waste D-List |
| 03 = MA RTK | 19 = FDA 180 | 35 = RCRA Waste P-List |
| 04 =MN Hazardous Substance | 20 = FDA 181 | 36 = RCRA Waste U-List |
| 05 =NJ RTK | 21 = FDA 182 | 37 = SARA Section 302 |
| 06 = PA RTK | 22 = FDA 184 | 38 = SARA Section 313 |
| 07 = CAA Section 112 HAPs | 23 = FDA 186 | 39 = TSCA 12 (b) |
| 08 = CWA Section 307 | 24 = FDA 189 | 40 = TSCA Section 4 |
| 09 = CWA Section 311 | 25 = IARC Group 1 | 41 = TSCA Section 5(a) |
| 10 =DOT Marine Pollutant | 26 = IARC Group 2A | 42 = TSCA Section 8(a) CAIR |
| 11 = FDA 172 | 27 = IARC Group 2B | 43 = TSCA Section 8(a) PAIR |
| 12 = FDA 173 | 28 = IARC Group 3 | 44 = TSCA Section 8(d) |
| 13 = FDA 174 | 29 = IARC Group 4 | 45 = WHIMS - IDL |
| 14 = FDA 175 | 30 = NTP Carcinogen | 46 = Germany D TAL |
| 15 = FDA 176 | 31 = OSHA Carcinogen | 47 = Germany WKG |
| 16 = FDA 177 | 32 = OSHA Highly Hazardous | 48 = DEA List 1 |
| | | 49 = DEA List 2 |

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORY LISTINGS:

AUSTRALIA	YES (AUS)
CANADA	YES (DSL)
CHINA	YES (IECSC)
EUROPEAN UNION	YES (EINECS)
JAPAN	YES (ENCS)
KOREA	YES (ECL)
PHILIPPINES	YES (PICCS)
UNITED STATES	YES (TSCA)

EU LABELING:

Risk and Safety Phrases:

S22: Do not breathe dust.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 0 Reactivity: 0 Special: NA

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA).

REVISION STATEMENT: This MSDS was updated to include a GHS review.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV	- Threshold Limit Value	TWA	- Time Weighted Average
STEL	- Short-term Exposure Limit	PEL	- Permissible Exposure Limit
ACGIH	- American Conference of Government Industrial Hygienists	OSHA	- Occupational Safety & Health Administration
NIOSH	- National Institute for Occupational Safety & Health	NFPA	- National Fire Protection Agency
WHMIS	- Workplace Hazardous Materials Information System	IARC	- Intl. Agency for Research on Cancer
EINECS	- European Inventory of existing Commercial Chemical Substances	RCRA	- Resource Conservation Recovery Act
SARA	- Superfund Amendments and Reauthorization Act.	TSCA	- Toxic Substance Control Act
EC50	- Effective Concentration	LC50	- Lethal Concentration
LD50	- Lethal Dose	CAS	- Chemical Abstract Service
NDA	- No Data Available	NA	- Not Applicable
<=	- Less Than or Equal To	>=	- Greater Than or Equal To
CNS	- Central Nervous System	MAK	- Germany Maximum Concentration Values

This data sheet is prepared according to the latest adaptation of the EEC Guideline 67/548.
This data sheet is prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This data sheet is prepared according to the ANSI MSDS Standard (Z400.1).
This data sheet was prepared by EHS Product Stewardship Group, Chevron Phillips Chemical Company LP, 10001 Six Pines Drive, The Woodlands, TX 77380.
This data sheet is prepared according to the Globally Harmonized System (GHS).

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.



SAFETY DATA SHEET

EMI-2224

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME	EMI-2224
APPLICATION	Defoamer.
SUPPLIER	M-I SWACO. Endeavour Drive Arnhall Business Park Westhill Aberdeen AB32 6UF Scotland UK T = +44 (0)1224-742200 F = +44 (0)1224-742288 E-mail = MBXMSDS-EH@miswaco.com
EMERGENCY TELEPHONE	(24 Hour) Europe +44 (0) 1235 239 670, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Middle East and Africa +44 (0) 1235 239 671.

2 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification (67/548)
GLYCOL DERIVATIVES			60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

INGESTION

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, foam, dry powder or carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES

Containers close to fire should be removed immediately or cooled with water.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

EMI-2224**ENVIRONMENTAL PRECAUTIONS**

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Stop leak if possible without risk. Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid spilling, skin and eye contact.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry, cool and well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**INGREDIENT COMMENTS**

No exposure limits noted for ingredient(s).

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

HAND PROTECTION

For prolonged or repeated skin contact use suitable protective gloves. Use protective gloves made of: Nitrile. or Neoprene.

EYE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

OTHER PROTECTION

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid		
COLOUR	Light (or pale) Amber		
ODOUR	Slight odour		
SOLUBILITY	Insoluble in water		
RELATIVE DENSITY	~ 0.96	FLASH POINT (°C)	>130°C

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

11 TOXICOLOGICAL INFORMATION**INHALATION**

Gas or vapour in high concentrations may irritate respiratory system.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Prolonged and frequent contact may cause redness and irritation.

EYE CONTACT

Spray and vapour in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION

EMI-2224

ECOTOXICITY

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.com.

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
---------	---

15 REGULATORY INFORMATION

RISK PHRASES

NC	Not classified.
----	-----------------

SAFETY PHRASES

NC	Not classified.
----	-----------------

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU DIRECTIVES

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

INTERNATIONAL CHEMICAL INVENTORIES

Contact REACH@miswaco.com for REACH information. Complies with the following national/regional chemical inventory requirements: AICS, DSL/NDL, IECSC, EINECS / ELINCS, TCCL ECL, NZIoC, TSCA

16 OTHER INFORMATION

INFORMATION SOURCES

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. Micromedex. European Chemicals Bureau - ESIS (European Chemical Substances Information).

REVISION COMMENTS

This is first issue. Compiled or revised by Laura McDonald

ISSUED BY

Bill Cameron

REVISION DATE	15-03-10
---------------	----------

REV. NO./REPL. SDS GENERATED 0

SDS NO.	13518
---------	-------

RISK PHRASES IN FULL

NC	Not classified.
----	-----------------

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

KWIK-SEAL - All Grades

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME KWIK-SEAL - All Grades

APPLICATION Lost circulation material.

SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119

EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
Blend of Vegetable Fibres			60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The Data Shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, foam, dry powder or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS

High concentrations of dust may form explosive mixture with air.

SPECIFIC HAZARDS

Fire creates: Carbon dioxide (CO₂). and Carbon monoxide (CO).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

KWIK-SEAL - All Grades**SPILL CLEAN UP METHODS**

Avoid generation and spreading of dust. Collect in containers and seal securely. Remove containers and flush area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Provide good ventilation. Do not use contact lenses. Avoid handling which leads to dust formation. Avoid contact with skin and eyes.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
Blend of Vegetable Fibres	WEL		4 mg/m3 resp. dust		

INGREDIENT COMMENTS

NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection must be used if air contamination exceeds acceptable level. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Fibrous Flakes or Granular
COLOUR	Brownish Yellow
ODOUR	Slight odour
SOLUBILITY	Insoluble in water
RELATIVE DENSITY	0.9 - 1.2

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid contact with: naked flame

MATERIALS TO AVOID

None known.

11 TOXICOLOGICAL INFORMATION**INHALATION**

Dust may irritate respiratory system or lungs.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

KWIK-SEAL - All Grades**12 ECOLOGICAL INFORMATION****ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

NC Not classified.

SAFETY PHRASES

NC Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**INFORMATION SOURCES**

Material Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s).

REVISION COMMENTS

The following sections have been revised: 3, 5, 6, 13, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Dr. Kirsty Walker

REVISION DATE 07-12-05

REV. NO./REPL. SDS GENERATED 2

SDS NO. 10879

RISK PHRASES IN FULL

NC Not classified.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

**SAFETY DATA SHEET
LIME (CALCIUM HYDROXIDE)****1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

PRODUCT NAME LIME (CALCIUM HYDROXIDE)
SYNONYMS, TRADE NAMES CALCIUM HYDROXIDE
APPLICATION pH modifier.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
CALCIUM HYDROXIDE (LIME)	215-137-3	1305-62-0	60-100%	Xi;R36/38.

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The Data Shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Irritating to eyes and skin.

CLASSIFICATION Xi;R36/38.

4 FIRST-AID MEASURES**INHALATION**

Move the exposed person to fresh air at once. For breathing difficulties oxygen may be necessary. Get medical attention.

INGESTION

DO NOT INDUCE VOMITING! Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious.

Provide rest, warmth and fresh air. Get medical attention immediately!

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

Use fire-extinguishing media appropriate for surrounding materials.

SPECIAL FIRE FIGHTING PROCEDURES

Keep run-off water out of sewers and water sources. Dike for water control.

UNUSUAL FIRE & EXPLOSION HAZARDS

High concentrations of dust may form explosive mixture with air.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

LIME (CALCIUM HYDROXIDE)**SPILL CLEAN UP METHODS**

Avoid generation and spreading of dust. Ventilate well. Collect in containers and seal securely. Remove containers and flush area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid spilling, skin and eye contact. Avoid handling which leads to dust formation. Do not use contact lenses.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place. Keep in original container.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
CALCIUM HYDROXIDE (LIME)	WEL		5 mg/m3		

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide sufficient ventilation for operations causing dust formation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Dust mask/respirator. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Impermeable material. Rubber, neoprene or PVC.

EYE PROTECTION

Contact lenses should not be worn when working with this chemical! Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station and safety shower.

HYGIENE MEASURES

Wash contaminated clothing before reuse.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	White White / off-white		
ODOUR	Odourless		
SOLUBILITY	Slightly soluble in water.		
MOL. WEIGHT	74	MELTING POINT (°C)	580
RELATIVE DENSITY	2.34 @ 20 °C	BULK DENSITY	2.24 g/cm3
PARTICLE SIZE (Micron)	<500	pH-VALUE, CONC. SOLUTION	12.4
SOLUBILITY VALUE (g/100g H2O@ 20°C)	1.7		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid contact with: Water, moisture. and Creation of dust clouds.

MATERIALS TO AVOID

Acids, oxidising. Acids, non-oxidising. Acids - organic. Organic nitro compounds.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 7340 mg/kg (oral rat)

INHALATION

May cause irritation to the respiratory system. Symptoms may include sore throat, coughing, shortness of breath and difficulty breathing.

INGESTION

May cause burns in mucous membranes, throat, oesophagus and stomach.

LIME (CALCIUM HYDROXIDE)**SKIN CONTACT**

Irritating to skin. Prolonged or repeated exposure may cause severe irritation.

EYE CONTACT

Irritating to eyes. Repeated exposure may cause chronic eye irritation. Extreme irritation of eyes and mucous membranes, including burning and tearing.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**LABELLING**

Irritant

RISK PHRASES

R36/38 Irritating to eyes and skin.

SAFETY PHRASES

S24/25 Avoid contact with skin and eyes.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 Wear suitable gloves.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 2 HMIS Flammability - 0 HMIS Physical Hazard - 0

INFORMATION SOURCES

Micromedex. Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.).

REVISION COMMENTS

The following sections have been revised: 2, 5, 6, 7, 8, 10, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE 12-10-05

REV. NO./REPL. SDS GENERATED 3

SDS NO. 10290

RISK PHRASES IN FULL

R36/38 Irritating to eyes and skin.

LIME (CALCIUM HYDROXIDE)

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

POLYPAC (All Grades)

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	POLYPAC (All Grades)
SYNONYMS, TRADE NAMES	Polypac ELV, Polypac R, Polypac Supreme R, Polypac Supreme UL and Polypac UL.
APPLICATION	Fluid loss control
SUPPLIER	M-I Drilling Fluids UK Ltd, Pocra Quay, Footdee, Aberdeen. AB11 5DQ T -44 (0)1224-584336 F -44 (0)1224-576119
EMERGENCY TELEPHONE	001 281 561 1600 (USA)

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
POLY ANIONIC CELLULOSE		9004-32-4	60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

CAS-NO. 9004-32-4

COMPOSITION COMMENTS

The Data Shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Carbon dioxide (CO₂). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES

In case of spills, beware of slippery floors and surfaces.

UNUSUAL FIRE & EXPLOSION HAZARDS

High concentrations of dust may form explosive mixture with air.

SPECIFIC HAZARDS

Asphyxiating gases/vapours/fumes of: Carbon dioxide (CO₂). Carbon monoxide (CO).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Avoid discharge into drains.

POLYPAC (All Grades)**SPILL CLEAN UP METHODS**

Collect in containers and seal securely. Flush area clean with lots of water. Be aware of potential for surfaces to become slippery. Avoid generation and spreading of dust.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid contact with skin and eyes. Avoid handling which leads to dust formation. Provide good ventilation.

STORAGE PRECAUTIONS

Store at moderate temperatures in dry, well ventilated area.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**INGREDIENT COMMENTS**

NUI = Nuisance dust, OES TWA 4mg/m³ Respirable Dust, 10 mg/m³ Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection must be used if air contamination exceeds acceptable level. Dust filter P2 (for fine dust).

HAND PROTECTION

No specific hand protection noted, but gloves may still be advisable. For prolonged or repeated skin contact use suitable protective gloves. Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

HYGIENE MEASURES

Wash contaminated clothing before reuse.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Granular Powder, dust		
COLOUR	White to White / off-white		
ODOUR	No characteristic odour.		
SOLUBILITY	Completely soluble in water		
RELATIVE DENSITY	1.5 - 1.6 @ 25 °C	BULK DENSITY	400 - 800 kg/m ³
pH-VALUE, DILUTED SOLUTION	6.5 - 8.5 @ 1 %	DECOMPOSITION TEMPERATURE (>= 230 °C)	

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Hygroscopic.

HAZARDOUS POLYMERISATION

Will not polymerise.

MATERIALS TO AVOID

Strong oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Asphyxiating gases/vapours/fumes of: Oxides of: Sodium. Carbon dioxide (CO₂). Carbon monoxide (CO).

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 27 000 mg/kg (oral rat)

INHALATION

Dust may irritate respiratory system or lungs.

INGESTION

May cause discomfort if swallowed.

POLYPAC (All Grades)**SKIN CONTACT**

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

NC Not classified.

SAFETY PHRASES

NC Not classified.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 1 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.). Micromedex. Material Safety Data Sheet, Misc. manufacturers.

REVISION COMMENTS

Classification updated. Revised by Silvia Smart.

ISSUED BY

Sam Hoskin

REVISION DATE 20-Jul-05

REV. NO./REPL. SDS GENERATED 3

SDS NO. 10844

RISK PHRASES IN FULL

NC Not classified.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

POTASSIUM CHLORIDE BRINE

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME POTASSIUM CHLORIDE BRINE
APPLICATION Oil well completion fluid.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
POTASSIUM CHLORIDE	231-211-8	7447-40-7	10-30%	-
WATER	231-791-2	7732-18-5	60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

This product formulation is not classified as hazardous in accordance with the EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES

INHALATION

Provide rest, warmth and fresh air. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

SPECIFIC HAZARDS

Fire or high temperatures create: Oxides of: Potassium.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

POTASSIUM CHLORIDE BRINE**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Stop leak if possible without risk. Dike far ahead of spill for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Do not use contact lenses. Avoid spilling, skin and eye contact. Avoid inhalation of vapours.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
POTASSIUM CHLORIDE	WEL		4 mg/m3 resp.dust		

INGREDIENT COMMENTS

Because this product is a liquid, the dust-related WEL'S (workplace exposure limits) for the components do not apply.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection not required.

HAND PROTECTION

Use protective gloves made of: Impermeable material. Rubber or plastic.

EYE PROTECTION

Wear splash-proof eye goggles to prevent any possibility of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Clear Liquid				
COLOUR	Colourless				
ODOUR	Odourless				
SOLUBILITY	Soluble in water				
BOILING POINT (°C)	102°C	MELTING POINT (°C)	-7°C		
RELATIVE DENSITY	1.17 @ 15 °c	pH-VALUE, CONC. SOLUTION	~ 7		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

MATERIALS TO AVOID

Sulphuric acid (H2SO4). Strong oxidising substances.

POTASSIUM CHLORIDE BRINE**HAZARDOUS DECOMPOSITION PRODUCTS**

Fire or high temperatures create: Oxides of: Potassium.

11 TOXICOLOGICAL INFORMATION**INHALATION**

May cause irritation to the respiratory system.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Prolonged and frequent contact may cause redness and irritation.

EYE CONTACT

Spray and vapour in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID). The product has been assessed and contained in Chapters 17 and 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.

15 REGULATORY INFORMATION**RISK PHRASES**

NC Not classified.

SAFETY PHRASES

NC Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s). MARPOL 73/78. Marine Environment Protection Committee (MEPC) Circulars. MEPC.2 MEPC 54/10/4. IBC Code. IMO Resolution A.673 (16), Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk Offshore Support Vessels.

REVISION COMMENTS

General revision. Revised by Bill Cameron

ISSUED BY

Dr. Kirsty Walker

POTASSIUM CHLORIDE BRINE

REVISION DATE 03-11-06

REV. NO./REPL. SDS GENERATED 3

SDS NO. 10064

RISK PHRASES IN FULL

NC Not classified.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

Potassium Chloride

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME Potassium Chloride

APPLICATION Oil well drilling fluid additive. Oil well completion fluid additive.

SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119

EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
POTASSIUM CHLORIDE	231-211-8	7447-40-7	90-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

EU INDEX NO. 000-000-00-0

EC (EINECS) NO. 231-211-8

CAS-NO. 7447-40-7

COMPOSITION COMMENTS

The Data Shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, foam, dry powder or carbon dioxide.

SPECIFIC HAZARDS

Fire or high temperatures create: Asphyxiating gases/vapours/fumes of: Chlorides.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

SPILL CLEAN UP METHODS

Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE

Potassium Chloride**USAGE PRECAUTIONS**

Avoid handling which leads to dust formation. Provide good ventilation.

STORAGE PRECAUTIONS

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

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**INGREDIENT COMMENTS**

NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate ventilation. Observe Workplace Exposure Limits and minimise the risk of inhalation of dust.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Use respiratory equipment with particle filter, type P2.

HAND PROTECTION

For prolonged or repeated skin contact use suitable protective gloves. Rubber gloves are recommended.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	White		
ODOUR	Odourless		
SOLUBILITY	Soluble in water		
RELATIVE DENSITY	1.98 20	pH-VALUE, DILUTED SOLUTION	~7 1%
PARTITION COEFFICIENT (N-Octanol/Water)	-3.0	SOLUBILITY VALUE (g/100g H ₂ O@ 37 20°C)	

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Avoid wet and humid conditions.

MATERIALS TO AVOID

Strong oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Toxic gases/vapours/fumes of: Chlorides.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 2600 mg/kg (oral rat)

INHALATION

Dust may irritate respiratory system or lungs.

INGESTION

May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information. OSPAR have defined this chemical as PLONOR. Not regarded as dangerous for the environment. This material is a naturally occurring mineral.

Potassium Chloride**13 DISPOSAL CONSIDERATIONS**

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION

RISK PHRASES

NC Not classified.

SAFETY PHRASES

NC Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION

GENERAL INFORMATION

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Croner's: Substances Hazardous to Health. Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.).

REVISION COMMENTS

The following sections have been revised: 4, 5, 6, 7, 8, 11, 12, 13, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE 09-09-05

REV. NO./REPL. SDS GENERATED 1

SDS NO. 10857

RISK PHRASES IN FULL

NC Not classified.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

SAFE-CARB (All Grades)

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME SAFE-CARB (All Grades)

APPLICATION Weighting agent. Lost circulation material. Bridging material.

SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119

EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
CALCIUM CARBONATE	207-439-9	471-34-1	60-100%	-
QUARTZ, CRYSTALLINE SILICA	238-878-4	14808-60-7	<1%	Xn;R20.

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the maximum exposure limit may lead to chronic lung disease such as silicosis. Because of quantity and composition, the health hazard is small. The data shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Use fire-extinguishing media appropriate for surrounding materials.

UNUSUAL FIRE & EXPLOSION HAZARDS

High concentrations of dust may form explosive mixture with air.

SPECIFIC HAZARDS

The product is non-combustible. If heated, toxic vapours may be formed. such as, Carbon monoxide (CO). and Carbon dioxide (CO₂).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SAFE-CARB (All Grades)**6 ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Do not use contact lenses. Provide good ventilation. Avoid handling which leads to dust formation.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
CALCIUM CARBONATE	WEL		4 mg/m3 resp.dust		
QUARTZ, CRYSTALLINE SILICA	WEL		0.3 mg/m3		

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust. The quartz component of this product is currently being reviewed by the (UK) HSE. As a result they have issued Chemical Hazard Alert Notice 35. It states that although the present limit is set at 0.3mg/m3 (8-hour TWA) employers should aim to control exposure to 0.1mg/m3 (8-hour TWA) or below, until the new guidelines are issued.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection must be used if air contamination exceeds acceptable level. Dust filter P3 (for especially fine dust/powder).

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Powder, dust

COLOUR White / off-white

ODOUR Odourless

SOLUBILITY Insoluble in water

RELATIVE DENSITY 2.9 g/cm3

pH-VALUE, DILUTED SOLUTION 8.5-9.5 100g/l @ 20°C

DECOMPOSITION TEMPERATURE 825°C
(°C)

SAFE-CARB (All Grades)**10 STABILITY AND REACTIVITY****STABILITY**

Stable under normal temperature conditions.

MATERIALS TO AVOID

Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

The product is non-combustible. If heated, toxic vapours may be formed, such as, Carbon monoxide (CO), and Carbon dioxide (CO₂).

11 TOXICOLOGICAL INFORMATION**INHALATION**

Dust may irritate respiratory system or lungs.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

HEALTH WARNINGS

This product contains a small quantity of quartz. Prolonged and repeated exposure by inhalation to concentrations of crystalline silica exceeding the maximum exposure limit may lead to chronic lung disease such as silicosis. Because of quantity and composition, the health hazard is small.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

NC Not classified.

SAFETY PHRASES

NC Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EC.

GUIDANCE NOTES

Workplace Exposure Limits EH40. IARC Monographs, Vol.68, 1997.

16 OTHER INFORMATION

SAFE-CARB (All Grades)

GENERAL INFORMATION

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s). European Chemicals Bureau - ESIS (European Chemical Substances Information System).

REVISION COMMENTS

General revision. Revised by Bill Cameron

ISSUED BY

Dr. Kirsty Walker

REVISION DATE 29-09-06

REV. NO./REPL. SDS GENERATED 3

SDS NO. 10755

RISK PHRASES IN FULL

R20 Harmful by inhalation.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

MATERIAL SAFETY DATA SHEET

SAFE-CIDE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: SAFE-CIDE

APPLICATIONS: Oil well completion fluid additive.

EMERGENCY TELEPHONE: 281-561-1600

SUPPLIER: Supplied by a Business Unit of
M-I L.L.C.
P.O. Box 42842, Houston, Texas 77242-2842
See cover sheet for local supplier.

TELEPHONE: 281-561-1509

FAX: 281-561-7240

CONTACT PERSON: Sam Hoskin - Manager, Occupational Health

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
1,3,5-Triazine-1,3,5(2H,4H,6H)-triethanol	4719-04-4	50-100 %		
Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, tetrasodium salt	64-02-8	1-5 %		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING! HARMFUL IF SWALLOWED

Do not take internally. Wash Thoroughly after handling. This product is a/an Clear, colorless liquid Dike and contain spills. Keep out of sewers and waterways. Skin and eye irritant.

May cause sensitization by skin contact.

ACUTE EFFECTS:

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTION: Harmful if swallowed.

SKIN: Irritating to skin. May cause sensitisation by skin contact.

EYES: Severely irritating to the eyes.

CHRONIC EFFECTS:

SENSITIZATION: May cause sensitization, an allergic reaction, which becomes evident on reexposure to this chemical.

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:

Inhalation. Skin and/or eye contact.

TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.**INHALATION:** Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.**INGESTION:** Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.**SKIN:** Immediately remove contaminated clothing. Wash skin thoroughly with soap and water.**EYES:** Immediately rinse with water for several minutes. Continue to rinse for at least 15 minutes and get medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F): >212 **METHOD:** PM Closed cup.**AUTO IGNITION TEMP. (°F):** N/D**FLAMMABILITY LIMIT - LOWER(%):** N/D**FLAMMABILITY LIMIT - UPPER(%):** N/D**EXTINGUISHING MEDIA:**Carbon dioxide (CO₂). Dry chemicals. Foam. Water spray, fog or mist.**SPECIAL FIRE FIGHTING PROCEDURES:**

Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (including fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

UNUSUAL FIRE & EXPLOSION HAZARDS:

No unusual fire or explosion hazards noted.

HAZARDOUS COMBUSTION PRODUCTS:

Irritating gases/vapors/fumes. Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:

Absorb in vermiculite, dry sand or earth and place into containers. Rinse area with water. Dike far ahead of larger spills for later disposal. Do not contaminate drainage or waterways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

INGREDIENT NAME:	CAS No.:	OSHA PEL:		ACGIH TLV:		OTHER:		UNITS:
		TWA:	STEL:	TWA:	STEL:	TWA:	STEL:	
1,3,5-Triazine-1,3,5(2H,4H,6H)-triethanol	4719-04-4							No std.
Glycine,	64-02-8							No std.
N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, tetrasodium salt								

INGREDIENT COMMENTS:

This product is regulated as nuisance particulates (dust/mist/aerosol). TLV: 3 mg/m3 resp. dust; PEL: 5 mg/m3 resp. dust.

PROTECTIVE EQUIPMENT:**ENGINEERING CONTROLS:**

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: If exposed to particulates/aerosols:
Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.
If exposed to organic vapors:
Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR with organic vapor cartridge.

PROTECTIVE GLOVES:

Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Impermeable material. Such as, Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION:

Wear chemical safety goggles where eye exposure is reasonably probable.

PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Liquid.
COLOR:	Clear.
ODOR:	Characteristic.
SOLUBILITY DESCRIPTION:	Miscible with water.

BOILING POINT (°F, interval):	>212	PRESSURE:	
DENSITY/SPECIFIC GRAVITY (g/ml):	1.15 - 1.16	TEMPERATURE (°F):	68
pH-VALUE, DILUTED SOLUTION:	10-11	CONCENTRATION (%M):	

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
N/D.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Nitrites. Strong acids and oxidizers. On contact with acid, releases formaldehyde.

HAZARDOUS DECOMPOSITION PRODUCTS:
Oxides of: Nitrogen. and oxides of - Carbon.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:
Toxicological data for major component(s):

Component: 1,3,5-Triazine-1,3,5(2H,4H,6H)-triethanol

TOXIC DOSE - LD 50: 763 mg/kg (oral rat)

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:
No ecological information is available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous.
Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

PRODUCT RQ: N/A

U.S. DOT:
U.S. DOT CLASS: Not regulated.

CANADIAN TRANSPORT:
TDGR CLASS: Not regulated.

SEA TRANSPORT:
IMDG CLASS: Not regulated.

AIR TRANSPORT:
ICAO CLASS: Not regulated.

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
1,3,5-Triazine-1,3,5(2H,4H,6H)-triethanol	4719-04-4	Yes	No	No	No	Yes
Glycine,	64-02-8	Yes	No	No	No	Yes
N,N'-1,2-ethanediyldis[N-(carboxymethyl)-, tetrasodium salt						

US FEDERAL REGULATIONS: WASTE CLASSIFICATION:

Not a hazardous waste by U.S. RCRA criteria. See Section 13.

REGULATORY STATUS:

This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA 311 Categories:
1: Immediate (Acute) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:
TSCA (U.S.)

STATE REGULATIONS: STATE REGULATORY STATUS:

This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):
None.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS: LABELS FOR SUPPLY:



REGULATORY STATUS:

This Material Safety Data Sheet has been prepared in compliance with the Controlled Product Regulations.

Canadian WHMIS Classification: D2B - Other Toxic Effects: Toxic Material

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX: 2 Moderate Hazard
FLAMMABILITY: 0 Minimal Hazard
REACTIVITY: 0 Minimal Hazard
NPCA HMIS PERS. PROTECT. INDEX: J - Splash Goggles, Gloves, Synthetic Apron, Dust and Vapor Respirator.

USER NOTES: N/A = Not applicable N/D = Not determined

INFORMATION SOURCES: OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.
ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).
Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).
Product information provided by the commercial vendor(s).

PREPARED BY: Sam Hoskin/bb

REVISION No./Repl. MSDS of: 1/August 16, 2000

MSDS STATUS: Approved.

DATE: October 6, 2000

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals an/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET SAFE-COR* EN

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name SAFE-COR* EN

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Corrosion inhibitor.

1.3. Details of the supplier of the safety data sheet

Supplier M-I SWACO
A Schlumberger Company
Woodlands Drive
Kirkhill Industrial Estate
Dyce, Aberdeen AB21 0GW
Scotland UK
T=+44(0)1224-246600
F=+11(0)1224-246699
Email - MISDS@slb.com

1.4. Emergency telephone number

(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.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (1999/45/EEC) Xi;R36/38. R43.

2.2. Label elements

Contains FORMALDEHYDE, REACTION PRODUCTS WITH ETHANOLAMINE

Labelling



Irritant

Risk Phrases

R36/38 Irritating to eyes and skin.
R43 May cause sensitisation by skin contact.

Safety Phrases

S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 Wear suitable gloves.
S60 This material and its container must be disposed of as hazardous waste.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

SAFE-COR* EN

FORMALDEHYDE, REACTION PRODUCTS WITH ETHANOLAMINE		10-30%
CAS-No.: 85186-27-2	EC No.: 286-011-3	
Classification (EC 1272/2008)	Classification (67/548/EEC)	
Acute Tox. 4 - H302	Xn;R22.	
Skin Irrit. 2 - H315	Xi;R36/38.	
Eye Irrit. 2 - H319	R43,R52.	
Skin Sens. 1 - H317		

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

The data shown is in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion

Do not induce vomiting. Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if any discomfort continues.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the 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 information

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible. For further information, please refer to section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Water spray, foam, dry powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

Fire or high temperatures create: Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x).

5.3. Advice for firefighters

Special Fire Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

SAFE-COR* EN

6.3. Methods and material for containment and cleaning up

Stop leak if possible without risk. Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Avoid spilling, skin and eye contact. Avoid inhalation of vapours and spray mists. May cause sensitisation by skin contact. Persons susceptible to allergic reactions should not handle this product.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place. Avoid contact with acids and oxidising substances.

Storage Class

Chemical storage.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Ingredient Comments**

No exposure limits noted for ingredient(s).

8.2. Exposure controls**Protective equipment****Process conditions**

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

Provide adequate general and local exhaust ventilation.

Respiratory equipment

If ventilation is insufficient, suitable respiratory protection must be provided. Use respiratory equipment with combination filter, type A2/P3. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Hand protection

Use suitable protective gloves if risk of skin contact. Nitrile or Neoprene gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Eye protection

Wear approved safety goggles.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties****Appearance**

Liquid

Colour

Dark brown.

Odour

Amine.

SAFE-COR* EN

<u>Solubility</u>	Soluble in water.
<u>Melting point (°C)</u>	- 8°C
<u>Relative density</u>	1.05 g/cm ³ @ 20°C
<u>pH-Value, Conc. Solution</u>	10.6
<u>Viscosity</u>	5.7 cP @ 20°C
<u>Flash point (°C)</u>	> 70°C CC (Closed cup).
<u>Partition Coefficient (N-Octanol/Water)</u>	<0

9.2. Other information

Not relevant

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Not known.

10.4. Conditions to avoid

Not known.

10.5. Incompatible materials**Materials To Avoid**

Avoid contact with acids and oxidising substances.

10.6. Hazardous decomposition products

Fire or high temperatures create: Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects**Aspiration hazard:**

Not anticipated to present an aspiration hazard based on chemical structure.

General information

Risk of sensitisation or allergic reactions among sensitive individuals.

Inhalation

Gas or vapour in high concentrations may irritate respiratory system.

Ingestion

Harmful if swallowed.

Skin contact

Irritating to skin. May cause sensitisation by skin contact.

Eye contact

Irritating to eyes. Spray and vapour in the eyes may cause irritation and smarting.

Route of entry

Skin and/or eye contact.

Target Organs

Skin Eyes

SECTION 12: ECOLOGICAL INFORMATION**Ecotoxicity**

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

12.1. Toxicity**Acute Fish Toxicity**

Harmful to aquatic organisms.

IC 50, 72 Hrs, Algae, mg/l 1 - 10*

*Based on components

12.2. Persistence and degradability**Degradability**

The product is biodegradable.

Biodegradation >60%

12.3. Bioaccumulative potential**Bioaccumulative potential**

The product is not bioaccumulating.

Partition coefficient <0

12.4. Mobility in soil**Mobility:**

The product is 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

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

Waste Class

The definitive European Waste code for this product will depend upon the final use that is made of this material. EWC-code: 07 01 04. Waste number: 7152. Organic waste without halogen.

SECTION 14: TRANSPORT INFORMATION**General**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards**Environmentally Hazardous Substance/Marine Pollutant**

No.

SAFE-COR* EN

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable. Please contact MISDS@slb.com for info regarding transport in Bulk.

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Uk Regulatory References**

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2. Chemical Safety Assessment**International Chemical Inventories**

Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Europe (EINECS / ELINCS),

SECTION 16: OTHER INFORMATION**Abbreviations and acronyms used in the safety data sheet**

*a mark of M-I L.L.C.

Information Sources

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments

General revision. Updated according to REACH Annex II.

Issued By	Sandra McWilliam
Revision Date	05-Mar-13
Revision	1
Supersedes date	10-Jan-11
SDS No.	14392
Safety Data Sheet Status	Temporarily approved for use for 3 months.
Date	05-Mar-13
Signature	Ewan McLeod
Signature 2	Nina Øvrehus

Risk Phrases In Full

R22	Harmful if swallowed.
R52	Harmful to aquatic organisms.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.

Hazard Statements In Full

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

Disclaimer

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

SAFE-SCAV HS

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME SAFE-SCAV HS

APPLICATION Hydrogen sulphide scavenger.

SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119

EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
HYDROXYALKYL TRIAZINE			60-100%	Xn;R20/21/22. Xi;R36/38.
WATER	231-791-2	7732-18-5	30-60%	-

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

This product is classified as harmful in accordance with the EU Directives.

3 HAZARDS IDENTIFICATION

Harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes and skin.

CLASSIFICATION Xn;R20/21/22. Xi;R36/38.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

INGESTION

Do not induce vomiting. Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, foam, dry powder or carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES

Cool containers exposed to flames with water until well after the fire is out.

SPECIFIC HAZARDS

Fire or high temperatures create: Asphyxiating gases/vapours/fumes of: Carbon dioxide (CO₂). Carbon monoxide (CO). and Oxides of: Nitrogen.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SAFE-SCAV HS**6 ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS**

Wear proper personal protective equipment (see MSDS Section 8).

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Stop leak if possible without risk. Absorb spillage with suitable absorbent material. Collect in containers and seal securely. Remove containers and flush area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid spilling, skin and eye contact. Avoid inhalation of vapours. Do not use contact lenses.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**INGREDIENT COMMENTS**

No exposure limits noted for ingredient(s).

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Gas cartridge suitable for organic substances.

HAND PROTECTION

Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION

Wear splash-proof eye goggles to prevent any possibility of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid		
COLOUR	Amber Yellow		
ODOUR	Amine.		
SOLUBILITY	Soluble in water		
MELTING POINT (°C)	< - 20	RELATIVE DENSITY	1.065 - 1.135 @ 16 °c
VISCOSITY	< 10 cSt @ 38 °c	FLASH POINT (°C)	> 100 PM Closed cup.
PARTITION COEFFICIENT (N-Octanol/Water)	- 1.5 to 0.2		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

HAZARDOUS POLYMERISATION

Will not polymerise.

MATERIALS TO AVOID

Strong oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Carbon dioxide (CO₂). Carbon monoxide (CO). and Oxides of: Nitrogen.

11 TOXICOLOGICAL INFORMATION

SAFE-SCAV HS

TOXIC DOSE 1 - LD 50 1620 mg/kg (oral rat)

INHALATION

Harmful by inhalation. In high concentrations, vapours are anaesthetic and may cause headache, fatigue, dizziness and central nervous system effects.

INGESTION

Harmful if swallowed. May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Harmful in contact with skin. Liquid may irritate skin. Can cause a rash when short time exposure. Repeated and prolonged exposure can cause burns.

EYE CONTACT

Irritating to eyes. Contact with eyes may cause moderate to severe irritation.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**LABELLING**

Harmful

RISK PHRASES

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R36/38 Irritating to eyes and skin.

SAFETY PHRASES

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S24/25 Avoid contact with skin and eyes.

S36/37 Wear suitable protective clothing and gloves.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 2 HMIS Flammability - 1 HMIS Physical Hazard - 0

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.).

REVISION COMMENTS

The following sections have been revised: 5, 8, 10, 12, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Dr. Kirsty Walker

REVISION DATE

19-01-06

SAFE-SCAV HS

REV. NO./REPL. SDS GENERATED 2

SDS NO. 10345

RISK PHRASES IN FULL

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R36/38 Irritating to eyes and skin.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET SAFE-SCAV* HSB

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name SAFE-SCAV* HSB

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Hydrogen sulphide scavenger.

1.3. Details of the supplier of the safety data sheet

Supplier M-I SWACO
A Schlumberger Company
Woodlands Drive
Kirkhill Industrial Estate
Dyce, Aberdeen AB21 0GW
Scotland UK
T=+44(0)1224-246600
F=+11(0)1224-246699
Email - MISDS@slb.com

Manufacturer SMI Oilfield Technology & Products FZE
P.O.Box 17120
Jebel Ali
Dubai
UAE
+97 14 8833100
+97 14 8837197

1.4. Emergency telephone number

(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.

National Emergency Telephone Number

+31 (0)30-2748888 Only for the purpose of informing medical personnel in cases of acute intoxications in the Netherlands.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Acute Tox. 4 - H302;Acute Tox. 2 - H330;Skin Sens. 1 - H317
Environment	Not classified.

Classification (1999/45/EEC)

T;R23. Xn;R22. R43.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Contains 2,2',2''-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL

Label In Accordance With (EC) No. 1272/2008



SAFE-SCAV* HSB**Signal Word** Danger**Hazard Statements**

H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.

Precautionary Statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P310 Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P501A Dispose of waste and residues in accordance with local authority requirements. This material and its container must be disposed of as a hazardous waste.

Supplementary Precautionary Statements

P261 Avoid breathing vapour/spray.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixtures**

2,2',2''-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL		30-60%
CAS-No.: 4719-04-4	EC No.: 225-208-0	
Classification (EC 1272/2008) Acute Tox. 4 - H302 Acute Tox. 2 - H330 Skin Sens. 1 - H317	Classification (67/548/EEC) T;R23. Xn;R22. R43.	
WATER		30-60%
CAS-No.: 7732-18-5	EC No.: 231-791-2	
Classification (EC 1272/2008) Not classified.	Classification (67/548/EEC) Not classified.	
2-AMINOETHANOL		1-5%
CAS-No.: 141-43-5	EC No.: 205-483-3	
Classification (EC 1272/2008) Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1B - H314 STOT SE 3 - H335	Classification (67/548/EEC) C;R34 Xn;R20/21/22	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

The data shown is in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****Inhalation**

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention immediately!

SAFE-SCAV* HSB**Ingestion**

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Do not induce vomiting. Get medical attention immediately!

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the 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 information**

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible. For further information, please refer to section 11.

Inhalation

Toxic by inhalation.

Ingestion

Harmful if swallowed.

Skin contact

May cause sensitisation by skin contact.

4.3. Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Extinguishing media**

Water spray, foam, dry powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

Fire or high temperatures create: Vapours/gases/fumes of: Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x).

5.3. Advice for firefighters**Special Fire Fighting Procedures**

Containers close to fire should be removed immediately or cooled with water.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Stop leak if possible without risk. Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

6.4. Reference to other sections

For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Avoid spilling, skin and eye contact. Avoid inhalation of vapours and spray mists.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

SAFE-SCAV* HSB

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters**

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
2-AMINOETHANOL	WEL	1 ppm	2,5 mg/m ³	3 ppm	7,6 mg/m ³	Sk

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through skin.

2,2',2''-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL (CAS: 4719-04-4)**DNEL**

Inhalation. Long Term Systemic Effects 19 mg/m³

PNEC

Freshwater 0.006mg/L
 Marinewater 0.00066mg/L
 Soil 0.00219mg/kg
 STP 5.5mg/L
 Sediment (Freshwater) 0.0172mg/kg
 Sediment (Marinewater) 0.00172mg/kg
 Intermittent release 0.66mg/L

8.2. Exposure controls**Protective equipment****Process conditions**

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

Provide adequate general and local exhaust ventilation.

Respiratory equipment

Wear suitable respiratory protection. Chemical respirator with organic vapour cartridge.

Hand protection

For prolonged or repeated skin contact use suitable protective gloves. Use protective gloves made of: Nitrile. or Neoprene.

Eye protection

Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

Hygiene measures

Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash hands after handling. Promptly remove any clothing that becomes wet or contaminated.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

<u>Appearance</u>	Liquid
<u>Colour</u>	Amber.
<u>Odour</u>	Amine.
<u>Solubility</u>	Soluble in water.
<u>Melting point (°C)</u>	<-20°C
<u>Relative density</u>	1.065-1.135 @16°C

SAFE-SCAV* HSB

<u>Viscosity</u>	<10cSt @38°C
<u>Flash point (°C)</u>	>101°C CC (Closed cup).
<u>Partition Coefficient (N-Octanol/Water)</u>	-1.5 - 0.2

9.2. Other information

Not relevant

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known 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 Polymerisation**

Will not polymerise.

10.4. Conditions to avoid

Not known.

10.5. Incompatible materials**Materials To Avoid**

Strong oxidising substances.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects**Aspiration hazard:**

Toxic by inhalation.

Inhalation

Toxic by inhalation.

Ingestion

Harmful if swallowed. May cause stomach pain or vomiting.

Skin contact

May cause sensitisation by skin contact.

Eye contact

Spray and vapour in the eyes may cause irritation and smarting.

Route of entry

No route of entry noted.

Target Organs

No specific target organs noted

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

12.1. Toxicity

SAFE-SCAV* HSB**Acute Fish Toxicity**

Not considered toxic to fish.

12.2. Persistence and degradability**Degradability**

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Partition coefficient -1.5 - 0.2

12.4. Mobility in soil**Mobility:**

The product is 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.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements. This material and its container must be disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN No. (ADR/RID/ADN) 2810

UN No. (IMDG) 2810

UN No. (ICAO) 2810

14.2. UN proper shipping name

Proper Shipping Name TOXIC LIQUID, ORGANIC, N.O.S.2, 2' - (hexahydro- 1, 3, 5-triazine- 1, 3, 5-triyl)triethanol

14.3. Transport hazard class(es)

ADR/RID/ADN Class 6.1

ADR/RID/ADN Class Class 6.1:Toxic substances.

IMDG Class 6.1

ICAO Class/Division 6.1

Transport Labels**14.4. Packing group**

ADR/RID/ADN Packing group II

IMDG Packing group II

ICAO Packing group II

14.5. Environmental hazards

SAFE-SCAV* HSB**Environmentally Hazardous Substance/Marine Pollutant**

No.

14.6. Special precautions for user

<u>EMS</u>	F-A, S-A
<u>Emergency Action Code</u>	2X
<u>Hazard No. (ADR)</u>	60
<u>Tunnel Restriction Code</u>	(D/E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Uk Regulatory References**

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

National Regulations

In accordance with Dutch Mining Regulation 9.2 and ARBO regulation Chapter 4.

Water hazard classification

WGK 1

15.2. Chemical Safety Assessment**International Chemical Inventories**

Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Australia (AICS), Canada (DSL / NDSL), China (IECSC), Europe (EINECS / ELINCS), Japan (METI / ENCS), Korea (TCCL / ECL), New Zealand (NZIoC), Phillipines (PICCS), United States (TSCA).

SECTION 16: OTHER INFORMATION**Abbreviations and acronyms used in the safety data sheet**

*a mark of M-I L.L.C.

Information Sources

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments

Classification updated. Compiled or Revised by Ewan MacLeod

Issued By Bill Cameron

Revision Date 24-05-11

Revision 1

Supersedes date 11-06-09

SDS No. 12673

Risk Phrases In Full

R34	Causes burns.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R22	Harmful if swallowed.
R37	Irritating to respiratory system.
R43	May cause sensitisation by skin contact.
R23	Toxic by inhalation.

SAFE-SCAV* HSB**Hazard Statements In Full**

H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Disclaimer

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET SAFE-SCAV* HSN

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name SAFE-SCAV* HSN

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Hydrogen sulphide scavenger.

1.3. Details of the supplier of the safety data sheet

Supplier M-I SWACO
A Schlumberger Company
Woodlands Drive
Kirkhill Industrial Estate
Dyce, Aberdeen AB21 0GW
Scotland UK
T=+44(0)1224-246600
F=+11(0)1224-246699
Email - MISDS@slb.com

1.4. Emergency telephone number

(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.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Acute Tox. 4 - H302; Acute Tox. 2 - H330; Skin Sens. 1 - H317
Environment	Not classified.

Classification (1999/45/EEC)

T; R23. Xn; R22. R43.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Contains 2,2',2''-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL

Label In Accordance With (EC) No. 1272/2008



Signal Word

Danger

Hazard Statements

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.

Precautionary Statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing vapour/spray.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P501A	Dispose of waste and residues in accordance with local authority requirements. This material and its container must be disposed of as a hazardous waste.

SAFE-SCAV* HSN

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixtures**

2,2',2''-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL		40-60%
CAS-No.: 4719-04-4 EC No.: 225-208-0		
Classification (EC 1272/2008)	Classification (67/548/EEC)	
Acute Tox. 4 - H302	T;R23.	
Acute Tox. 2 - H330	Xn;R22.	
Skin Sens. 1 - H317	R43.	
WATER		30-60%
Classification (EC 1272/2008)		Classification (67/548/EEC)
Not classified.		Not classified.
2-AMINOETHANOL		1-5%
CAS-No.: 141-43-5 EC No.: 205-483-3		
Classification (EC 1272/2008)	Classification (67/548/EEC)	
Acute Tox. 4 - H302	C;R34	
Acute Tox. 4 - H312	Xn;R20/21/22	
Acute Tox. 4 - H332		
Skin Corr. 1B - H314		
STOT SE 3 - H335		

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

The data shown is in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****Inhalation**

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion

Do not induce vomiting. Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

Skin contact

Remove contaminated clothing. Wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Get medical attention promptly if symptoms occur after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

4.2. Most important symptoms and effects, both acute and delayed**Inhalation.**

Toxic by inhalation.

Ingestion

Harmful if swallowed.

SAFE-SCAV* HSN

Skin contact

May cause sensitisation by skin contact.

Eye contact

May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Get medical attention if any discomfort continues.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Extinguishing media**

Water spray, foam, dry powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

Fire or high temperatures create: Vapours/gases/fumes of: Formaldehyde. Oxides of: Carbon. Nitrogen.

5.3. Advice for firefighters**Special Fire Fighting Procedures**

Containers close to fire should be removed immediately or cooled with water.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Stop leak if possible without risk. Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Persons susceptible to allergic reactions should not handle this product. Avoid inhalation of vapours/spray and contact with skin and eyes. All handling to take place in well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

Storage Class

Toxic storage.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters**

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
2-AMINOETHANOL	WEL	1 ppm	2,5 mg/m3	3 ppm	7,6 mg/m3	Sk

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through skin.

SAFE-SCAV* HSN**2,2',2''-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL (CAS: 4719-04-4)****DNEL**

Inhalation.	Long Term	Systemic Effects	19 mg/m ³
-------------	-----------	------------------	----------------------

PNEC

Freshwater	0.006mg/L
Marinewater	0.00066mg/L
Soil	0.00219mg/kg
STP	5.5mg/L
Sediment (Freshwater)	0.0172mg/kg
Sediment (Marinewater)	0.00172mg/kg
Intermittent release	0.66mg/L

8.2. Exposure controls**Protective equipment****Process conditions**

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

Provide adequate general and local exhaust ventilation.

Respiratory equipment

Wear suitable respiratory protection. A minimum of a chemical respirator with organic vapour cartridge should be worn. If there are conditions in which this triazine containing product produces a vapor, a chemical respirator with A1 +Formaldehyde and P2 particulate pre-filter combination would be required.

Hand protection

Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Nitrile. or Neoprene. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Eye protection

Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

<u>Appearance</u>	Liquid
<u>Colour</u>	Colourless to pale yellow.
<u>Odour</u>	Amine.
<u>Solubility</u>	Soluble in water.
<u>Melting point (°C)</u>	<-20°C
<u>Relative density</u>	1.1g/ml 25°C
<u>pH-Value, Conc. Solution</u>	10.2-11.3
<u>pH-Value, Diluted Solution</u>	9.9-10.9 1% solution
<u>Viscosity</u>	<40 cps 20°C
<u>Flash point</u>	>70°C Sh CC (Setaflash closed cup).

9.2. Other information

Not relevant

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

SAFE-SCAV* HSN

10.3. Possibility of hazardous reactions

Not known.

10.4. Conditions to avoid

Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials**Materials To Avoid**

Avoid contact with acids and oxidising substances. Bases.

10.6. Hazardous decomposition products

Fire or high temperatures create: Vapours/gases/fumes of: Formaldehyde. Oxides of: Carbon. Nitrogen.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects****Toxicological information**

This product may contain or release trace amounts of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1 carcinogen (limited evidence in humans, sufficient evidence in animals). Exposure to formaldehyde has been linked to adverse reproductive effects in some human and animal studies. In other reproductive studies, however, no adverse effects were noted. (Meditext). Formaldehyde may also cause skin and respiratory sensitisation (allergic reaction).

Acute toxicity:**Acute Toxicity (Oral LD50)**

763 mg/kg Rat

Acute Toxicity (Inhalation LC50)

0.371 mg/l (vapours) Rat

Aspiration hazard:

Not anticipated to present an aspiration hazard based on chemical structure.

Inhalation

Toxic by inhalation.

Ingestion

Harmful if swallowed.

Skin contact

May cause sensitisation by skin contact.

Eye contact

Irritating to eyes.

Route of entry

No route of entry noted.

Target Organs

No specific target organs noted

SECTION 12: ECOLOGICAL INFORMATION**Ecotoxicity**

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

12.1. Toxicity**Acute Fish Toxicity**

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

12.2. Persistence and degradability**Degradability**

The product is biodegradable.

SAFE-SCAV* HSN

12.3. Bioaccumulative potential**Bioaccumulative potential**

The product is not bioaccumulating.

12.4. Mobility in soil**Mobility:**

The product is 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.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements. This material and its container must be disposed of as hazardous waste.

Waste Class

The definitive European Waste code for this product will depend upon the final use that is made of this material. EWC-code: 07 01 04. Waste number: 7152. Organic waste without halogen.

SECTION 14: TRANSPORT INFORMATION**14.1. UN number**

UN No. (ADR/RID/ADN) 2810

UN No. (IMDG) 2810

UN No. (ICAO) 2810

14.2. UN proper shipping name

Proper Shipping Name TOXIC LIQUID, ORGANIC, N.O.S. (2, 2', 2''-(hexahydro-1, 3, 5-triazine -1, 3, 5-triyl) triethanol)

14.3. Transport hazard class(es)

ADR/RID/ADN Class 6.1

ADR/RID/ADN Class Class 6.1:Toxic substances.

IMDG Class 6.1

ICAO Class/Division 6.1

Transport Labels**14.4. Packing group**

ADR/RID/ADN Packing group II

IMDG Packing group II

ICAO Packing group II

14.5. Environmental hazards**Environmentally Hazardous Substance/Marine Pollutant**

No.

SAFE-SCAV* HSN

14.6. Special precautions for user

EMS	F-A, S-A
Emergency Action Code	2X
Hazard No. (ADR)	60
Tunnel Restriction Code	(D/E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Water hazard classification

WGK 1

15.2. Chemical Safety Assessment**International Chemical Inventories**

Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Australia (AICS), Canada (DSL / NDSL), China (IECSC), Europe (EINECS / ELINCS), Japan (METI / ENCS), Korea (TCCL / ECL), New Zealand (NZIoC), Phillipines (PICCS), United States (TSCA).

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet

*a mark of M-I L.L.C.

Information Sources

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments

The following sections have been revised: 2 Compiled or revised by Sandra McWilliam

Issued By Bill Cameron

Revision Date 27-Nov-12

Revision 1

Supersedes date 11-Aug-11

SDS No. 15009

Risk Phrases In Full

R34	Causes burns.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R22	Harmful if swallowed.
R37	Irritating to respiratory system.
R43	May cause sensitisation by skin contact.
R23	Toxic by inhalation.

Hazard Statements In Full

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.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

SAFE-SCAV* HSN**Disclaimer**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to the product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET SAFE-SCAV* NA

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name SAFE-SCAV* NA

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Oxygen Scavenger

1.3. Details of the supplier of the safety data sheet

Supplier M-I SWACO
A Schlumberger Company
Woodlands Drive
Kirkhill Industrial Estate
Dyce, Aberdeen AB21 0GW
Scotland UK
T=+44(0)1224-246600
F=+11(0)1224-246699
Email - MISDS@slb.com

Manufacturer SMI Oilfield Technology & Products FZE
P.O.Box 17120
Jebel Ali
Dubai
UAE
+97 14 8833100
+97 14 8837197

1.4. Emergency telephone number

(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.

National Emergency Telephone Number

+31 (0)30-2748888 Only for the purpose of informing medical personnel in cases of acute intoxications in the Netherlands.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	EUH031;Eye Irrit. 2 - H319
Environment	Not classified.

Classification (67/548/EEC)

Xi;R36. R31.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Label In Accordance With (EC) No. 1272/2008



Signal Word

Warning

SAFE-SCAV* NA**Hazard Statements**

H319 Causes serious eye irritation.

Precautionary Statements

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/attention.

Supplementary Precautionary Statements

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

Supplemental label information

EUH031 Contact with acids liberates toxic gas.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

AMMONIUM BISULPHITE		30-60%
CAS-No.: 10192-30-0	EC No.: 233-469-7	
Classification (EC 1272/2008) EUH031 Eye Irrit. 2 - H319	Classification (67/548/EEC) Xi;R36. R31.	
WATER		30-60%
CAS-No.: 7732-18-5	EC No.: 231-791-2	
Classification (EC 1272/2008) Not classified.	Classification (67/548/EEC) Not classified.	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

The data shown is in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****Inhalation**

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the 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 information**

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible. For further information, please refer to section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SAFE-SCAV* NA

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media**Extinguishing media**

Water spray, foam, dry powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

When heated, vapours/gases hazardous to health may be formed.

Specific hazards

Fire or high temperatures create: Oxides of: Sulphur. Ammonia or amines. and Nitrous gases (NOx).

5.3. Advice for firefighters**Special Fire Fighting Procedures**

Containers close to fire should be removed immediately or cooled with water.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Stop leak if possible without risk. Dike far ahead of larger spills for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

6.4. Reference to other sections

For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

This product slowly releases sulphur dioxide in contact with air. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Avoid spilling, skin and eye contact.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool and well-ventilated place. Store in closed original container at temperatures between 5°C and 30°C.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
SULPHUR DIOXIDE	WEL	1 ppm	2.6 mg/m3	1 ppm	2.6 mg/m3	

WEL = Workplace Exposure Limit.

Ingredient Comments

Exposure Limit noted above is for decomposition product Sulphur Dioxide.

8.2. Exposure controls**Protective equipment**

SAFE-SCAV* NA

**Process conditions**

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

Provide adequate general and local exhaust ventilation.

Respiratory equipment

Respiratory protection must be used if air contamination exceeds acceptable level. Use respiratory equipment with gas filter, type K.

Hand protection

Use protective gloves made of: Butyl rubber. Neoprene. or Nitrile.

Eye protection

Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

Hygiene measures

Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash hands after handling. Promptly remove any clothing that becomes wet or contaminated.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<u>Appearance</u>	Liquid
<u>Colour</u>	Colourless to pale yellow.
<u>Odour</u>	Pungent. Sulphur.
<u>Solubility</u>	Miscible with water
<u>Initial boiling point and boiling range</u> (°C)	105°C
<u>Relative density</u>	1.27 - 1.39 @ 20°C
<u>Vapour density (air=1)</u>	<1
<u>Vapour pressure</u>	18 mmHg 20°C
<u>pH-Value, Conc. Solution</u>	4.5 - 5.5 @ 20°C
<u>Flash point (°C)</u>	N/A

9.2. Other information

Not relevant

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reacts violently with strong oxidising substances. Reaction with: Acids.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Generates toxic gas in contact with acid.

10.4. Conditions to avoid

Avoid exposing to heat and contact with strong oxidising substances. Avoid contact with acids.

10.5. Incompatible materials**Materials To Avoid**

Strong oxidising substances. Strong acids. Strong alkalis.

10.6. Hazardous decomposition products

Sulphurous gases (SO_x). Nitrous gases (NO_x).

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects****Other Health Effects**

Bisulfites may cause skin sensitization in sulfite sensitive persons. Bisulfites may also cause respiratory sensitization in asthmatics and sulfite sensitive persons.

Acute toxicity:**Acute Toxicity (Oral LD50)**

> 2000 mg/kg Rat

Aspiration hazard:

Not anticipated to present an aspiration hazard based on chemical structure.

Inhalation

Gas or vapour may irritate respiratory system.

Ingestion

May irritate and cause stomach pain, vomiting and diarrhoea.

Skin contact

Irritating and may cause redness and pain.

Eye contact

Irritating to eyes. Spray and vapour in the eyes may cause irritation and smarting.

Route of entry

No route of entry noted.

Target Organs

No specific target organs noted

SECTION 12: ECOLOGICAL INFORMATION**Ecotoxicity**

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

12.1. Toxicity**Acute Fish Toxicity**

Do not empty into river: may cause impoverishment of oxygen and ammonia increase.

12.2. Persistence and degradability**Degradability**

The product is biodegradable.

12.3. Bioaccumulative potential**Bioaccumulative potential**

The product does not contain any substances expected to be bioaccumulating.

12.4. Mobility in soil**Mobility:**

Mobile.

12.5. Results of PBT and vPvB assessment

Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects

SAFE-SCAV* NA

None known.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION**General**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards**Environmentally Hazardous Substance/Marine Pollutant**

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****UK Regulatory References**

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

National Regulations

In accordance with Dutch Mining Regulation 9.2 and ARBO regulation Chapter 4.

Water hazard classification

WGK 3

15.2. Chemical Safety Assessment**International Chemical Inventories**

Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Australia (AICS), Canada (DSL / NDSL), China (IECSC), Europe (EINECS / ELINCS), Japan (METI / ENCS), Korea (TCCL / ECL), New Zealand (NZIoC), Phillipines (PICCS), United States (TSCA).

SECTION 16: OTHER INFORMATION

SAFE-SCAV* NA**Abbreviations and acronyms used in the safety data sheet**

*a mark of M-I L.L.C.

General information

HMIS Health - 3 HMIS Flammability - 0 HMIS Physical Hazard - 1

Information Sources

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments

Classification updated. Compiled or Revised by Ewan MacLeod

Issued By Bill Cameron

Revision Date 23-06-11

Revision 7

Supersedes date 16-05-11

SDS No. 11326

Risk Phrases In Full

R31 Contact with acids liberates toxic gas.

R36 Irritating to eyes.

Hazard Statements In Full

H319 Causes serious eye irritation.

EUH031 Contact with acids liberates toxic gas.

Disclaimer

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET
SAPP**1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

PRODUCT NAME SAPP
APPLICATION Oil well drilling fluid additive. Dispersant Thinner.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE 001 281 561 1600 (USA)

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
SODIUM ACID PYROPHOSPHATE			60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

EU INDEX NO. 2-318-35-0

CAS-NO. 7758-16-9

COMPOSITION COMMENTS

This product formulation is not classified as hazardous in accordance with the EU Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES**INHALATION**

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly. Drink plenty of water. Get medical attention if any discomfort continues.

SKIN CONTACT

Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES

In the event of a fire involving this material, wear full protective clothing and SCBA (self contained breathing apparatus) operated in positive pressure mode.

UNUSUAL FIRE & EXPLOSION HAZARDS

No unusual fire or explosion hazards noted.

SPECIFIC HAZARDS

Fire or high temperatures create: Oxides of: Sodium. Phosphorus.

6 ACCIDENTAL RELEASE MEASURES**SPILL CLEAN UP METHODS**

Wear necessary protective equipment. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE

SAPP**USAGE PRECAUTIONS**

Avoid handling which leads to dust formation. Provide good ventilation. Do not use contact lenses.

STORAGE PRECAUTIONS

Store at moderate temperatures in dry, well ventilated area.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**INGREDIENT COMMENTS**

NUI = Nuisance dust, WEL TWA 4mg/m³ Respirable Dust, 10 mg/m³ Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Dust filter P2 (for fine dust).

HAND PROTECTION

No specific hand protection noted, but gloves may still be advisable. For prolonged or repeated skin contact use suitable protective gloves.
. Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	White		
ODOUR	Odourless		
SOLUBILITY	Soluble in water		
MELTING POINT (°C)	220	RELATIVE DENSITY	1.862 @ 20 °c
BULK DENSITY	0.8-0.9 kg/m ³	pH-VALUE, DILUTED SOLUTION	4.0 - 4.5 @ 1% %
SOLUBILITY VALUE (g/100g H ₂ O@ 20°C)	13% @25°C		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid wet and humid conditions.

MATERIALS TO AVOID

Bases, alkalies (inorganic). Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Oxides of: Sodium. Phosphorus.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 2650 mg/kg (oral-mouse)

INHALATION

Dust may irritate respiratory system or lungs.

INGESTION

May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Not regarded as dangerous for the environment. OSPAR have defined this chemical as PLONOR.

SAPP

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION

RISK PHRASES

NC Not classified.

SAFETY PHRASES

NC Not classified.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

STATUTORY INSTRUMENTS

Control of Substances Hazardous to Health.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION

GENERAL INFORMATION

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). The Merck Index, 11. edition, 1989. Sigma-Aldrich Material Safety Data Sheets on CD-ROM.

REVISION COMMENTS

The following sections have been revised: 7, 8, 9, 10, 13 and 14 Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE 03-08-05

REV. NO./REPL. SDS GENERATED 4

SDS NO. 10350

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

**SAFETY DATA SHEET
SODA ASH****1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

PRODUCT NAME SODA ASH
SYNONYMS, TRADE NAMES SODIUM CARBONATE
APPLICATION pH modifier.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
SODIUM CARBONATE	207-838-8	497-19-8	60-100%	Xi;R36

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Irritating to eyes.

CLASSIFICATION Xi;R36.

4 FIRST-AID MEASURES**INHALATION**

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. DO NOT induce vomiting. Get medical attention immediately.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

Use fire-extinguishing media appropriate for surrounding materials.

SPECIAL FIRE FIGHTING PROCEDURES

No specific fire fighting procedure given.

SPECIFIC HAZARDS

Fire or high temperatures create: Carbon dioxide (CO₂).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SODA ASH**SPILL CLEAN UP METHODS**

Collect in containers and seal securely. Remove containers and flush area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Do not use contact lenses. Avoid spilling, skin and eye contact. Avoid spread of dust. Use mechanical ventilation in case of handling which causes formation of dust.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
SODIUM CARBONATE	WEL		4 mg/m3 resp. dust		

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits WEL TWA 4mg/m3 respirable dust, 10mg/m3 total dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection must be used if the general level exceeds the Recommended Workplace Exposure Limit. Use specified dust masks. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Granular Powder, dust		
COLOUR	White		
ODOUR	No characteristic odour.		
SOLUBILITY	Completely soluble in water		
MELTING POINT (°C)	851° C	RELATIVE DENSITY	2.53 @ 20°C
pH-VALUE, CONC. SOLUTION	11.6	SOLUBILITY VALUE (g/100g H ₂ O@ 20°C)	22g/100ml.

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid contact with acids and oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Carbon dioxide (CO₂).

11 TOXICOLOGICAL INFORMATION**INHALATION**

Gas or vapour in high concentrations may irritate respiratory system.

INGESTION

May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Prolonged or repeated exposure may cause severe irritation.

EYE CONTACT

Irritating to eyes. Repeated exposure may cause chronic eye irritation.

SODA ASH

12 ECOLOGICAL INFORMATION

ECOTOXICITY

OSPAR have defined this chemical as PLONOR. Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION

LABELLING



Irritant

RISK PHRASES

R36 Irritating to eyes.

SAFETY PHRASES

S22 Do not breathe dust.

S25 Avoid contact with eyes.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION

GENERAL INFORMATION

HMIS Health - 1 HMIS Flammability - 1 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.).

REVISION COMMENTS

The following sections have been revised: 4, 5, 6, 7, 8, 10, 12, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE 13-10-05

REV. NO./REPL. SDS GENERATED 1

SDS NO. 10926

RISK PHRASES IN FULL

R36 Irritating to eyes.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET SODIUM BICARBONATE

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME SODIUM BICARBONATE
APPLICATION Oil well drilling fluid additive.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE Europe only: +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

EU INDEX NO. 000-000-00-0
EC (EINECS) NO. 205-633-8
CAS-NO. 144-55-8

COMPOSITION COMMENTS

This product formulation is not classified as hazardous in accordance with the EU Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health hazard under current legislation.

CLASSIFICATION -

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN CONTACT

Remove contaminated clothing. Wash skin with soap and water. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, foam, dry powder or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS

Dust may form explosive mixture with air.

SPECIFIC HAZARDS

Fire or high temperatures create: Oxides of: Carbon.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

SODIUM BICARBONATE**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid handling which leads to dust formation. Provide good ventilation. Do not use contact lenses.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
SODIUM BICARBONATE	WEL		4 mg/m3 resp. dust		

INGREDIENT COMMENTS

NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	White		
ODOUR	Odourless No characteristic odour.		
SOLUBILITY	Soluble in water.		
MELTING POINT (°C)	270	RELATIVE DENSITY	2.16 20 C
BULK DENSITY	801-1089 kg/m3	pH-VALUE, DILUTED SOLUTION	8.3 1%
SOLUBILITY VALUE (g/100g H2O@ 20°C)	9.6		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

SODIUM BICARBONATE**CONDITIONS TO AVOID**

Avoid wet and humid conditions.

MATERIALS TO AVOID

Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Oxides of: Carbon.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 4220 mg/kg (oral rat)

INHALATION

Dust may irritate respiratory system or lungs.

INGESTION

May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information. Not regarded as dangerous for the environment.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

NC

Not classified.

SAFETY PHRASES

NC

Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.).

REVISION COMMENTS

The following sections have been revised: 4, 5, 6, 7, 8, 12, 13, 14, 15 and 16. Revised by Bill Cameron

SODIUM BICARBONATE

ISSUED BY

Sam Hoskin

REVISION DATE 12-09-05

REV. NO./REPL. SDS GENERATED 3

SDS NO. 20117

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET SODIUM CHLORIDE BRINE

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME SODIUM CHLORIDE BRINE
APPLICATION Oil well completion fluid.
SUPPLIER M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
T -44 (0)1224-584336
F -44 (0)1224-576119
EMERGENCY TELEPHONE +44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
SODIUM CHLORIDE	231-598-3	7647-14-5	10-30%	-
WATER	231-791-2	7732-18-5	60-100%	-

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

SPECIFIC HAZARDS

By heating and fire, toxic vapours/gases may be formed.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

SODIUM CHLORIDE BRINE**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Stop leak if possible without risk. Dike far ahead of spill for later disposal. Absorb spillage with suitable absorbent material. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Do not use contact lenses. Avoid spilling, skin and eye contact. Avoid inhalation of vapours.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**PROTECTIVE EQUIPMENT****ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection not required.

HAND PROTECTION

Chemical resistant gloves required for prolonged or repeated contact. such as, Butyl rubber. or Polyvinyl chloride (PVC).

EYE PROTECTION

Wear splash-proof eye goggles to prevent any possibility of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid		
COLOUR	Colourless		
ODOUR	Odourless		
SOLUBILITY	Soluble in water		
BOILING POINT (°C)	106°C	MELTING POINT (°C)	-5
RELATIVE DENSITY	1.2 @ 20 °c	pH-VALUE, CONC. SOLUTION	8.5

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

MATERIALS TO AVOID

Strong oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

By heating and fire, toxic vapours/gases may be formed.

11 TOXICOLOGICAL INFORMATION

SODIUM CHLORIDE BRINE**INHALATION**

May cause irritation to the respiratory system.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Prolonged and frequent contact may cause redness and irritation.

EYE CONTACT

Spray and vapour in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID). The product has been assessed and contained in Chapters 17 and 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.

15 REGULATORY INFORMATION**RISK PHRASES**

NC Not classified.

SAFETY PHRASES

NC Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 J - Splash Goggles, Gloves, Synthetic Apron, Dust and Vapor Respirator.

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s). MARPOL 73/78. Marine Environment Protection Committee (MEPC) Circulars. MEPC.2 MEPC 54/10/4. IBC Code. IMO Resolution A.673 (16), Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk Offshore Support Vessels.

REVISION COMMENTS

General revision. Revised by Bill Cameron

ISSUED BY

Dr. Kirsty Walker

REVISION DATE 03-11-06

REV. NO./REPL. SDS GENERATED 1

SDS NO. 11115

SODIUM CHLORIDE BRINE

RISK PHRASES IN FULL

NC Not classified.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET SODIUM CHLORIDE

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	SODIUM CHLORIDE
SYNONYMS, TRADE NAMES	Salt, PVD Salt, NaCl
APPLICATION	Oil well drilling fluid additive. Oil well completion fluid additive.
SUPPLIER	M-I Drilling Fluids UK Ltd, Pocra Quay, Footdee, Aberdeen. AB11 5DQ T -44 (0)1224-584336 F -44 (0)1224-576119
EMERGENCY TELEPHONE	+44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

EU INDEX NO.	000-000-00-0
EC (EINECS) NO.	231-598-3
CAS-NO.	7647-14-5

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Not regarded as a health hazard under current legislation.

CLASSIFICATION

-

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly. Drink plenty of water. Contact physician if larger quantity has been consumed. Do not induce vomiting.

SKIN CONTACT

Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

This material is not combustible. Use fire-extinguishing media appropriate for surrounding materials.

UNUSUAL FIRE & EXPLOSION HAZARDS

No unusual fire or explosion hazards noted.

SPECIFIC HAZARDS

Fire or high temperatures create: Chlorine. Oxides of: Sodium. Chlorides.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

SODIUM CHLORIDE**ENVIRONMENTAL PRECAUTIONS**

Do not discharge into drains, water courses or onto the ground.

SPILL CLEAN UP METHODS

Shovel into dry containers. Cover and move the containers. Flush the area with water. Be aware of potential for surfaces to become slippery when wet.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid spilling, skin and eye contact. Avoid handling which leads to dust formation. Provide good ventilation.

STORAGE PRECAUTIONS

Store at moderate temperatures in dry, well ventilated area. Keep containers tightly closed. Corrosive to most metals.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**INGREDIENT COMMENTS**

NUI = Nuisance dust, WEL TWA 4mg/m³ Respirable Dust, 10 mg/m³ Total Dust.

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Dust filter P2 (for fine dust).

HAND PROTECTION

No specific hand protection noted, but gloves may still be advisable. Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Crystals or Crystalline powder		
COLOUR	White		
ODOUR	Odourless No characteristic odour.		
SOLUBILITY	Soluble in water.		
MELTING POINT (°C)	801° C	RELATIVE DENSITY	2.165 20° C
BULK DENSITY	2169 kg/m ³	pH-VALUE, DILUTED SOLUTION	~ 7.1
SOLUBILITY VALUE (g/100g H ₂ O@ 20°C)	35.7		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid wet and humid conditions. Hygroscopic. Corrosive to metals.

MATERIALS TO AVOID

Strong oxidising substances. Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Chlorine. Oxides of: Sodium. Chlorides.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 3000 mg/kg (oral rat)

SODIUM CHLORIDE**INHALATION**

Dust may irritate respiratory system or lungs.

INGESTION

May cause gastric distress, nausea and vomiting if ingested.

SKIN CONTACT

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

HEALTH WARNINGS

INGESTION. This product has low toxicity. Only large volumes may have adverse impact on human health.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Contact M-I Swaco's QHSE Department for ecological information. Not regarded as dangerous for the environment. OSPAR have defined this chemical as PLONOR.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION**GENERAL**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION**RISK PHRASES**

NC Not classified.

SAFETY PHRASES

NC Not classified.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**GENERAL INFORMATION**

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Micromedex. Material Safety Data Sheet, Misc. manufacturers.

REVISION COMMENTS

Revised by Silvia Smart. The following sections have been revised: 2, 4, 5, 6, 7, 8, 10, 13, 15, 16.

ISSUED BY

Dr. Kirsty Walker

REVISION DATE

21-06-06

REV. NO./REPL. SDS GENERATED

3

SDS NO.

20036

SODIUM CHLORIDE

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



SAFETY DATA SHEET

SUGAR

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME: SUGAR

APPLICATIONS: Cement additive.

SUPPLIER: M-I Drilling Fluids UK Ltd,
Pocra Quay,
Footdee,
Aberdeen. AB11 5DQ
Tel: 44 (0)1224 - 584336
Fax: 44 (0)1224 - 576119

EMERGENCY TELEPHONES: 001 281 561 1600 (USA)

2. COMPOSITION/INFORMATION ON INGREDIENTS

NAME	EINECS Nr.:	CLASSIFICATION	CONTENT
CAS No.: SUGAR 57-50-1		- Not classified.	100 %

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS: This product is classified as containing no hazardous ingredients according to the EC Directives.

3. HAZARDS IDENTIFICATION

Not regarded as a health hazard under current legislation.

4. FIRST AID MEASURES

INHALATION: Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION: First aid is not normally required. Rinse mouth thoroughly. Drink plenty of water.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use extinguishing media appropriate for surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:	No specific fire fighting procedure given.
HAZARDOUS COMBUSTION PRODUCTS:	It may emit noxious fumes.

6. ACCIDENTAL RELEASE MEASURES

Spill Cleanup Methods:	Shovel into dry containers. Cover and move the containers. Flush the area with water. Wear necessary protective equipment.
-------------------------------	--

7. HANDLING AND STORAGE

Usage Precautions:	Avoid handling which leads to dust formation. Provide good ventilation.
Storage Precautions:	Store at moderate temperatures in dry, well ventilated area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ingredient Comments:	This material is considered a nuisance dust, OES TWA 4mg/m ³ Respirable Dust, 10 mg/m ³ Total Dust.
-----------------------------	---

PROTECTIVE EQUIPMENT:

VENTILATION:	Provide adequate general and local exhaust ventilation.
RESPIRATORS:	Respiratory protection must be used if air concentration exceeds acceptable level. Dust filter P2 (for fine dust).
PROTECTIVE GLOVES:	No specific hand protection noted, but gloves may still be advisable. For prolonged or repeated skin contact use suitable protective gloves. Rubber or plastic.
EYE PROTECTION:	Wear dust resistant safety goggles where there is danger of eye contact.
OTHER PROTECTION:	Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Crystals.
--------------------	-----------

COLOUR:	White.	
ODOUR/TASTE:	Sweet.	
MELT./FREEZ. POINT (°C, interval):	170 - 180	
DENSITY/SPECIFIC GRAVITY (g/ml):	1.587	Temperature (°C):
PARTICLE SIZE (micron):	< 2000	
SOLUBILITY DESCRIPTION:	Very soluble in water.	
SOLUBILITY VALUE (g/100g H2O 20°C):	2 kg/l	

10. STABILITY AND REACTIVITY

STABILITY:	Normally stable.
CONDITIONS TO AVOID:	Not known.
HAZARDOUS DECOMP. PRODUCTS:	It may emit noxious fumes.

11. TOXICOLOGICAL INFORMATION

INHALATION:	Dust may irritate respiratory system or lungs.
INGESTION:	No specific health warnings noted.
SKIN:	No specific health warnings noted.
EYES:	Particles in the eyes may cause irritation and smarting.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:	Not regarded as dangerous for the environment.
MOBILITY:	Completely soluble in water.
DEGRADABILITY:	Readily biodegradable.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:	Recover and reclaim or recycle, if practical. Dispose of on site landfill area. Dispose of in accordance with Local Authority requirements.
-------------------	---

14. TRANSPORT INFORMATION

ROAD TRANSPORT NOTES:	Not classified for road transport.
RAIL TRANSPORT NOTES:	Not classified for rail transport.

SEA TRANSPORT NOTES: Not classified for sea transport.

AIR TRANSPORT NOTES: Not classified for air transport.

15. REGULATORY INFORMATION

RISK PHRASES: Not classified.

SAFETY PHRASES: Not classified.

16. OTHER INFORMATION

INFORMATION SOURCES: Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).

ISSUED BY: Sarah Glover

REVISION DATE: 01-12-03

REV. No./REPL. SDS GENERATED: 0

PRINTING DATE: 2003-12-01

R-PHRASES (Full Text): Not classified.

DISCLAIMER: MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.