



## DRILL-SURE™ OBM Additive

Version 1.8

Revision Date 2022-08-22

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2015/830

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1

##### Product information

Product Name : DRILL-SURE™ OBM Additive  
Material : 1114973

#### 1.2

##### Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses : Use in Oil and Gas field drilling and production operations -  
Supported Industrial

#### 1.3

##### Details of the supplier of the safety data sheet

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

Local : Chevron Phillips Chemicals International N.V.  
Airport Plaza (Stockholm Building)  
Leonardo Da Vincilaan 19  
1831 Diegem  
Belgium

SDS Requests: (800) 852-5530  
Responsible Party: Product Safety Group  
Email:sds@cpchem.com

#### 1.4

##### Emergency telephone:

##### Health:

866.442.9628 (North America)  
1.832.813.4984 (International)

##### Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)  
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090  
Mexico CHEMTREC 01-800-681-9531 (24 hours)  
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

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Argentina: +(54)-1159839431  
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)  
 Belgium: 070 245 245 (24 hours/day, 7 days/week)  
 Bulgaria: +359 2 9154 233  
 Croatia: +3851 2348 342 (24 hours/day, 7 days/week)  
 Cyprus: 1401  
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402  
 Denmark: Danish Poison Center (Gifftlinjen): +45 8212 1212  
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Finland: 0800 147 111 09 471 977 (24 hours/day)  
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)  
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)  
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)  
 Iceland: 543 2222 (24 hours/day, 7 days/week)  
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic  
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371  
 67042473. (24 hours.)  
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Lithuania: +370 (85) 2362052  
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)  
 Malta: +356 2395 2000  
 The Netherlands: NVIC: +31 (0)88 755 8000  
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)  
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Portugal: CIAV phone number: +351 800 250 250  
 Romania: +40213183606  
 Slovakia: +421 2 5477 4166  
 Slovenia: Phone number: 112  
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24  
 hours/day, 7 days/week)  
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group  
 E-mail address : SDS@CPChem.com  
 Website : www.CPChem.com

**SECTION 2: Hazards identification****2.1**

**Classification of the substance or mixture  
REGULATION (EC) No 1272/2008**

Not a hazardous substance or mixture.

**2.2**

**Labeling (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture.

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**SECTION 3: Composition/information on ingredients****3.1 - 3.2****Substance or Mixture**

Synonyms : DRILLING MUD ADDITIVE  
HTHP Fluid Loss Additive  
Drill-Sure OBM

Molecular formula : UVCB

Contains no hazardous ingredients according to GHS. :

Remarks : Contains no hazardous ingredients according to GHS.

**SECTION 4: First aid measures****4.1****Description of first-aid measures**

General advice : No hazards which require special first aid measures.

If inhaled : Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.

In case of eye contact : Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**SECTION 5: Firefighting measures**

Flash point : Not applicable

Autoignition temperature : No data available

**5.1****Extinguishing media**

Unsuitable extinguishing media : High volume water jet.

**5.2****Special hazards arising from the substance or mixture**

Specific hazards during fire fighting : Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.

**5.3****Advice for firefighters**

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the

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surrounding environment.

Fire and explosion protection : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

**SECTION 6: Accidental release measures****6.1****Personal precautions, protective equipment and emergency procedures**

Personal precautions : Avoid dust formation.

**6.2****Environmental precautions**

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.

**6.3****Methods and materials for containment and cleaning up**

Methods for cleaning up : Pick up and arrange disposal without creating dust. Clean up promptly by sweeping or vacuum. Keep in suitable, closed containers for disposal.

Additional advice : Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

**6.4****Reference to other sections**

Reference to other sections : For personal protection see section 8. For disposal considerations see section 13.

**SECTION 7: Handling and storage****7.1****Precautions for safe handling  
Handling**

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient.

Advice on protection against fire and explosion : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

**7.2****Conditions for safe storage, including any incompatibilities****Storage**

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Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8: Exposure controls/personal protection****8.1****Control parameters**

DNEL : End Use: Workers  
Routes of exposure: Skin contact  
Potential health effects: Chronic effects, Systemic effects  
Value: 14,3 mg/kg

DNEL : End Use: Workers  
Routes of exposure: Inhalation  
Potential health effects: Chronic effects, Systemic effects  
Value: 25,2 mg/m<sup>3</sup>

PNEC : Marine water  
Value: 0,12 mg/l

PNEC : Marine sediment  
Value: 0,097 mg/kg

**8.2****Exposure controls  
Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Dusts and Mists / P100. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time

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which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Eye protection : Eye wash bottle with pure water. Safety glasses.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

For additional details, see the Exposure Scenario in the Annex portion

**SECTION 9: Physical and chemical properties****9.1****Information on basic physical and chemical properties****Appearance**

- Form : Fine Powder
- Physical state : solid
- Color : Dark Brown, Black
- Odor : no odor
- Odor Threshold : No data available

**Safety data**

- Flash point : Not applicable
- Lower explosion limit : Not applicable
- Upper explosion limit : Not applicable
- Autoignition temperature : No data available
- Thermal decomposition : No data available
- Molecular formula : UVCB
- pH : Not applicable
- Melting point/range : No data available
- Boiling point/boiling range : Not applicable
- Vapor pressure : Not applicable
- Relative density : 1,4 - 1,6
- Density : No data available

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Water solubility : partly soluble

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

Relative vapor density : Not applicable

Evaporation rate : No data available

**SECTION 10: Stability and reactivity****10.1**

**Reactivity** : Stable at normal ambient temperature and pressure.

**10.2**

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

**10.3****Possibility of hazardous reactions**

**Hazardous reactions** : Further information: No decomposition if stored and applied as directed.

**10.4**

**Conditions to avoid** : No data available.

**10.5**

**Materials to avoid** : No data available.

**Thermal decomposition** : No data available

**10.6**

**Other data** : No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information****11.1****Information on toxicological effects****DRILL-SURE™ OBM Additive**

**Acute oral toxicity** : LD50: > 5.000 mg/kg  
Species: Rat  
Sex: male and female

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**Acute inhalation toxicity** : LC50: > 5,3 mg/l  
Exposure time: 4 h  
Species: Rat

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Sex: male and female  
 Test atmosphere: dust/mist  
 Method: OECD Test Guideline 403  
 Rats exposed to a 5.3 mg/L dust aerosol for 4-hr resulted in effects generally expected with high concentrations of dust aerosols made of relatively dense particles. Higher lung weight and atelectasis persisted after the 14-day recovery period. There were no reports of lethality or any significant clinical observations. There was however an acute inflammatory response with evidence of recovery after 14-days. The presence of particulate matter with indication of partial clearance from the lung after the 14-day recovery period was noted. These effects would not be expected during normal operating conditions when using this substance.

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**Acute dermal toxicity** : No data available

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**Skin irritation** : No skin irritation

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**Eye irritation** : No eye irritation

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**Sensitization** : Did not cause sensitization on laboratory animals.

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**Repeated dose toxicity** : Species: Rat, male and female  
 Sex: male and female  
 Application Route: oral gavage  
 Dose: 0, 250, 500, 1000 mg/kg  
 Exposure time: 43 - 54 d  
 Number of exposures: daily  
 NOEL: 1.000 mg/kg  
 Method: OECD Guideline 422  
 No adverse effects expected

Species: Rat, male and female  
 Sex: male and female  
 Application Route: oral gavage  
 Dose: 0, 100, 300, 1000 mg/kg  
 Exposure time: 90 d  
 Number of exposures: daily  
 Method: OECD Test Guideline 408  
 No adverse effects expected

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**Genotoxicity in vitro** : Test Type: Ames test  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative



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Test Type: Chromosome aberration test in vitro  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 473  
 Result: negative

Test Type: Mouse lymphoma assay  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Guideline 476  
 Result: negative

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Reproductive toxicity**

: Species: Rat  
 Sex: male and female  
 Application Route: oral gavage  
 Dose: 0, 250, 500, 1000 mg/kg  
 Exposure time: 43-54 d  
 Number of exposures: daily  
 Method: OECD Guideline 422  
 NOAEL Parent: 1.000 mg/kg  
 NOAEL F1: 1.000 mg/kg  
 No adverse effects expected

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Developmental Toxicity**

: Species: Rat  
 Application Route: oral gavage  
 Dose: 0, 250, 500, 1000 mg/kg  
 Number of exposures: daily  
 Test period: 54 d  
 NOAEL Teratogenicity: 1.000 mg/kg  
 NOAEL Maternal: 1.000 mg/kg  
 No adverse effects expected

Species: Rat  
 Application Route: oral gavage  
 Dose: 0, 100, 300, 1000 mg/kg  
 Number of exposures: daily  
 Test period: GD 6 - 20  
 Method: OECD Guideline 414  
 NOAEL Teratogenicity: 1.000 mg/kg  
 NOAEL Maternal: 1.000 mg/kg  
 No adverse effects expected

**Toxicology Assessment****DRILL-SURE™ OBM Additive  
CMR effects**

: Carcinogenicity:  
 Not available  
 Mutagenicity:  
 Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
 Teratogenicity:  
 Animal testing did not show any effects on fetal development.  
 Reproductive toxicity:  
 Animal testing did not show any effects on fertility.

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**Further information** : Product dust may be irritating to eyes, skin and respiratory system.

**SECTION 12: Ecological information****12.1****Toxicity****Ecotoxicity effects**

**Toxicity to fish** : LC50: > 240 mg/l  
Exposure time: 96 h  
Species: Scophthalmus maximus (Flatfish, Flounder)  
semi-static test Method: OECD Test Guideline 203

**Toxicity to daphnia and other aquatic invertebrates** : LC50: 380 mg/l  
Exposure time: 48 h  
Species: Acartia tonsa (Marine Copepod)  
static test Method: ISO TC147/SC5/WG2

**Toxicity to algae** : EbC50: 240 mg/l  
Exposure time: 72 h  
Species: Skeletonema costatum (Marine Algae)  
static test Method: ISO 10253

ErC50: 390 mg/l  
Exposure time: 72 h  
Species: Skeletonema costatum (Marine Algae)  
static test Method: ISO 10253

**12.2****Persistence and degradability**

**Biodegradability** : Result: Not readily biodegradable.  
3 %  
Testing period: 28 d  
Method: Closed Bottle test

**12.3****Bioaccumulative potential**

Elimination information (persistence and degradability)

**Bioaccumulation** : The product may be accumulated in organisms.

**12.4****Mobility in soil**

**Mobility** : No data available

**12.5****Results of PBT and vPvB assessment**

**Results of PBT assessment** : Non-classified PBT substance, Non-classified vPvB substance

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or

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very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6****Other adverse effects**

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

**Ecotoxicology Assessment**

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

**SECTION 13: Disposal considerations****13.1****Waste treatment methods**

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

For additional details, see the Exposure Scenario in the Annex portion

**SECTION 14: Transport information****14.1 - 14.7****Transport information**

**The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).**

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

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NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**Maritime transport in bulk according to IMO instruments**

**SECTION 15: Regulatory information****15.1****Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**National legislation**

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

**Water hazard class (Germany)** : WGK 1 slightly water endangering

**15.2****Chemical Safety Assessment**

**Components** : Asphalt, sulfonated, sodium salt 269-212-0

**Major Accident Hazard Legislation** : ZEU\_SEVES3 Update: Not applicable

**Notification status**

Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.

Switzerland CH INV : Not in compliance with the inventory

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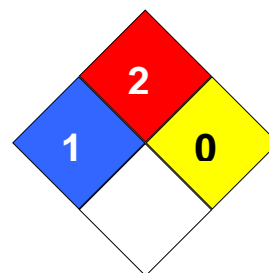
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United States of America (USA) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Other AIIC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
New Zealand NZIoC	:	Not in compliance with the inventory
Korea KECI	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory
China IECSC	:	Not in compliance with the inventory

**SECTION 16: Other information**

**NFPA Classification** : Health Hazard: 1  
Fire Hazard: 2  
Reactivity Hazard: 0

**Further information**

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic

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GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

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**Annex: Exposure Scenarios****Table of Contents**

Number	Title
ES 1	Use in Oil and Gas field drilling and production operations - Industrial; Industrial uses (SU3).



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**ES 1: Use in Oil and Gas field drilling and production operations - Industrial; Industrial uses (SU3).****1.1. Title section**

<b>Exposure Scenario name</b>	: Use in Oil and Gas field drilling and production operations - Industrial
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<b>Structured Short Title</b>	: Use in Oil and Gas field drilling and production operations - Industrial; Industrial uses (SU3).
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**Environment**

<b>CS 1</b>	<b>Use in Oil and Gas field drilling and production operations - Industrial</b>	<b>ERC4</b>
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**Worker**

<b>CS 2</b>	<b>Chemical production where opportunity for exposure arises</b>	<b>PROC4</b>
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**1.2. Conditions of use affecting exposure****1.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)****Product (article) characteristics**

Physical form of product	: Solid, low dustiness
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**Amount used (or contained in articles), frequency and duration of use/exposure**

Release type	: Continuous release
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**Technical and organisational conditions and measures**

Not applicable

**Conditions and measures related to treatment of waste (including article waste)**

Waste treatment	: Drilling muds are recycled and reused
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**1.2.2. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)****Product (article) characteristics**

Physical form of product	: Solid, low dustiness
--------------------------	------------------------

**Amount used (or contained in articles), frequency and duration of use/exposure**

Use frequency	: 3 hours/day
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**Technical and organisational conditions and measures**

Provide adequate ventilation.  
 Bags of dry powder should be emptied into hopper and pulled down by Venturi effect to minimize dust in the air.  
 Hoppers should be regularly washed down with water to rinse any residual product.  
 Empty bags into hopper when facing downwind.

**Conditions and measures related to personal protection, hygiene and health evaluation**

Respirator with a dust filter  
 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Other conditions affecting workers exposure**

Indoor or outdoor use : Covers indoor and outdoor use.

Temperature : Assumes use at not more than 20°C above ambient temperature.

**1.3. Exposure estimation and reference to its source****1.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)**

Protection Target	Exposure estimate	RCR
Sea water	0,0005 mg/l (EGEST)	0,004
Sea sediment	31,4 mg/kg wet weight (EGEST)	0,598

**1.3.2. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)**

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
dermal	systemic	Long-term	6,86 mg/kg/d (ECETOC TRA worker v3)	0,480
inhalative	systemic	Long-term	0,420 mg/m <sup>3</sup> (ECETOC TRA worker v3)	0,017
combined routes	systemic			0,497

**1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterization ratios are expected to be less than 1.

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

**DRILL-SURE™ OBM Additive**

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Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Available hazard data do not enable the derivation of a DNEL for carcinogenic and dermal irritant effects.