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

Product information
Product Name: Dimethyl Sulfide
Material: 1108785, 1073702, 1073703, 1073704, 1103885, 1073705, 1077804, 1089246, 1101535, 1098710, 1084190, 1028766, 1024530, 1024531, 1024532, 1024533, 1024534, 1024535, 1024536

EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Legal Entity Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl Sulfide</td>
<td>75-18-3</td>
<td>Chevron Phillips Chemicals International N.V.</td>
</tr>
<tr>
<td></td>
<td>200-846-2</td>
<td></td>
</tr>
</tbody>
</table>

Relevant Identified Uses Supported:
- Distribution
- Formulation
- Use as an intermediate
- Use as an intermediate in pharma
- Injection as odorant in fuels – industrial

Company:
- Chevron Phillips Chemical Company LP
- Specialty Chemicals
- 10001 Six Pines Drive
- The Woodlands, TX 77380

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

SDS Requests: (800) 852-5530
Technical Information: (832) 813-4862
Responsible Party: Product Safety Group
Email: sds@cpchem.com

Emergency telephone:

SDS Number:100000013358
SAFETY DATA SHEET

Dimethyl Sulfide

Version 2.0

Revision Date 2018-05-03

Health:
866.442.9628 (North America)
1.832.813.4984 (International)

Transport:
CHEMTREC 800.424.9300 or 703.527.3887 (int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

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

ODOR-FADE WARNING

A GAS LEAK CAN CAUSE A FIRE OR EXPLOSION RESULTING IN SERIOUS INJURY OR DEATH.

Be aware that the stenching chemical added to gas to make it detectable may not warn of a gas leak or the presence of propane or natural gas to all persons in every instance.

Instances where the odorant in an odorized gas may be undetectable include:

- Odor intensity may fade or be eliminated for a variety of chemical and physical causes, including the oxidation of rusting pipes, adsorption into or sticking onto the interior of pipes or appliances, or absorption into liquids.
- Contact with soil in underground leaks may de-odorize or remove odorant from the gas.
- Some people have a diminished ability, or inability to smell the stench. Factors that negatively affect a person’s sense of smell include age, gender, medical conditions, and alcohol/tobacco usage.
- The stench of odorized gas may not awaken sleeping persons.
- Other odors may mask or hide the stench.
- Exposure to the odor for even a short period of time, may cause nasal fatigue, where a person can no longer smell the stench.

Gas detectors listed by the Underwriters Laboratories (UL) can be used as an extra measure of safety for detecting gas leaks, especially under conditions where the odorant alone may not provide an adequate warning. Gas detectors emit a loud, shrill sound when gas is present and do not depend on sense of smell. Because the odor intensity can fade or people may have problems with their sense of smell, we recommend installing, per manufacturer’s instructions, one or more combustible gas detectors, in suitable locations to ensure adequate coverage to detect gas leaks.

Educate yourself, your employees, and your customers with the content of this warning and other important facts associated with the so-called “odor-fade phenomenon.”

SECTION 2: Hazards identification

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

Flammable liquids, Category 2
H225: Highly flammable liquid and vapor.

Label elements
Labeling (REGULATION (EC) No 1272/2008)

SDS Number: 100000013358

2/25
Hazard pictograms:

Signal Word: Danger

Hazard Statements: H225: Highly flammable liquid and vapor.

Precautionary Statements:

Prevention:
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.

Response:
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:
P403 + P235: Store in a well-ventilated place. Keep cool.

Disposal:
P501: Dispose of contents/container to an approved waste disposal plant.

Hazardous ingredients which must be listed on the label:
- 75-18-3 Dimethyl Sulfide

**SECTION 3: Composition/information on ingredients**

Synonyms:
- Dimethyl Sulfide Pure
- Methyl sulfide
- DMS
- Di-Methyl Sulfide

Molecular formula: C2H6S

Hazardous ingredients:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. EC-No. Index No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl Sulfide</td>
<td>75-18-3 200-846-2</td>
<td>Flam. Liq. 2; H225</td>
<td>99,5</td>
</tr>
</tbody>
</table>

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

**SECTION 4: First aid measures**

General advice:
- Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a
## Dimethyl Sulfide

**SAFETY DATA SHEET**

**Version 2.0**

**Revision Date 2018-05-03**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl Sulfide</td>
<td>Serious, potentially fatal pneumonia if swallowed or vomited.</td>
</tr>
</tbody>
</table>

**If inhaled**: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

**In case of skin contact**: If on skin, rinse well with water. If on clothes, remove clothes.

**In case of eye contact**: Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

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

### SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>-37 °C (-35 °F) estimated</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>220 °C (428 °F)</td>
</tr>
<tr>
<td>Suitable extinguishing media</td>
<td>Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>High volume water jet.</td>
</tr>
<tr>
<td>Specific hazards during firefighting</td>
<td>Do not allow run-off from fire fighting to enter drains or water courses.</td>
</tr>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>Wear self-contained breathing apparatus for firefighting if necessary.</td>
</tr>
<tr>
<td>Further information</td>
<td>Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.</td>
</tr>
<tr>
<td>Fire and explosion protection</td>
<td>Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Carbon oxides. Sulfur oxides.</td>
</tr>
</tbody>
</table>

### SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal precautions</td>
<td>Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to</td>
</tr>
</tbody>
</table>

**SDS Number:** 100000013358
Dimethyl Sulfide

SECTION 7: Handling and storage

Handling

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers: No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>SE</th>
<th>Beståndsdel</th>
<th>Grundval</th>
<th>Värde</th>
<th>Kontrollparametrar</th>
<th>Anmärkning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl Sulfide</td>
<td>SE AFS</td>
<td>NGV</td>
<td>1 ppm.</td>
<td>22.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RU</th>
<th>Компоненты</th>
<th>Основа</th>
<th>Величина</th>
<th>Параметры контроля</th>
<th>Заметка</th>
</tr>
</thead>
<tbody>
<tr>
<td>Диметилсульфид</td>
<td>RU OEL</td>
<td>ПДК разовая</td>
<td>50 mg/m3</td>
<td>+, 4, пары и/или газы</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PT</th>
<th>Componentes</th>
<th>Bases</th>
<th>Valor</th>
<th>Parâmetros de controlo</th>
<th>Nota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl Sulfide</td>
<td>PT OEL</td>
<td>VLE-MP</td>
<td>10 ppm.</td>
<td>irritação do TRS,</td>
<td></td>
</tr>
</tbody>
</table>

SDS Number:100000013358
### Dimethyl Sulfide

**SAFETY DATA SHEET**

**Version 2.0**

**Revision Date** 2018-05-03

<table>
<thead>
<tr>
<th>LV</th>
<th>Sastāvdaļas</th>
<th>Bāze</th>
<th>Vērtība</th>
<th>Pārvaldības parametri</th>
<th>Piezīme</th>
</tr>
</thead>
<tbody>
<tr>
<td>LV</td>
<td>Dimethyl Sulfide</td>
<td>LV OEL</td>
<td>AER 8 st</td>
<td>50 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT</th>
<th>Komponentai</th>
<th>Pagrindas, bazē</th>
<th>Vertē</th>
<th>Kontrolēs parametri</th>
<th>Pastaba</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT</td>
<td>Dimethyl Sulfide</td>
<td>LT OEL</td>
<td>IPRD</td>
<td>1 ppm,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IE</th>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE</td>
<td>Dimethyl Sulfide</td>
<td>IE OEL</td>
<td>OELV - 8 hrs (TWA)</td>
<td>20 ppm,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HR</th>
<th>Sastojci</th>
<th>Temelj</th>
<th>Vrijednost</th>
<th>Nadzorni parametri</th>
<th>Bilješka</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>Dimethyl Sulfide</td>
<td>HR OEL</td>
<td>GVI</td>
<td>5 ppm, 13 mg/m³</td>
<td>K,</td>
</tr>
</tbody>
</table>

**Note**:
1. Peentoim koos nea alla 2.5-mikromeetrise läbmooduga osakestest, mis võivad jõuda koos sissehingatava õhuga kopsu alveoolidesse

<table>
<thead>
<tr>
<th>ES</th>
<th>Componentes</th>
<th>Base</th>
<th>Valor</th>
<th>Parámetros de control</th>
<th>Nota</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES</td>
<td>Dimethyl Sulfide</td>
<td>ES VLA</td>
<td>VLA-ED</td>
<td>10 ppm,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EE</th>
<th>Komponendid, osad</th>
<th>Alused</th>
<th>Väärtus</th>
<th>Kontrolliparametrid</th>
<th>Märkused</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>Dimethyl Sulfide</td>
<td>EE OEL</td>
<td>Pinnorm</td>
<td>1 ppm,</td>
<td>1,</td>
</tr>
</tbody>
</table>

**Note**:
1. Peentoim koos nea alla 2.5-mikromeetrise läbmooduga osakestest, mis võivad jõuda koos sissehingatava õhuga kopsu alveoolidesse

<table>
<thead>
<tr>
<th>BE</th>
<th>Bestanddelen</th>
<th>Basis</th>
<th>Waarde</th>
<th>Controleparameters</th>
<th>Opmerking</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>Dimethyl Sulfide</td>
<td>BE OEL</td>
<td>TGG 8 hr</td>
<td>10 ppm, 26 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits.

**DNEL**
- End Use: Workers
  - Routes of exposure: Inhalation
  - Potential health effects: Chronic effects, Systemic effects
  - Value: 31,5 mg/m³

**DNEL**
- End Use: Workers
  - Routes of exposure: Skin contact
  - Potential health effects: Chronic effects, Systemic effects
  - Value: 80 mg/kg

**DNEL**
- End Use: Consumers
  - Routes of exposure: Inhalation
  - Potential health effects: Chronic effects, Systemic effects
  - Value: 5,6 mg/m³

**PNEC**
- Fresh water
  - Value: 0,29 mg/l

**PNEC**
- Marine water
  - Value: 0,0029 mg/l

**PNEC**
- Fresh water sediment
  - Value: 0,12 mg/kg

**PNEC**
- Soil
  - Value: 0,0072 mg/kg

**SDS Number:** 100000013358 6/25
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 Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

**Hand protection**: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

**Eye protection**: Eye wash bottle with pure water. Tightly fitting safety goggles.

**Skin and body protection**: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.

**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

**Information on basic physical and chemical properties**

**Appearance**
- Form: Liquid
- Physical state: Liquid
- Color: Clear
- Odor: Repulsive

**Safety data**
- Flash point: -37 °C (-35 °F) estimated

**SDS Number:** 100000013358
### Dimethyl Sulfide

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosion limit</td>
<td>2.2 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>19.7 % (V)</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>yes</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>220 °C (428 °F)</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C2H6S</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>62.14 g/mol</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Pour point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>37 °C (99 °F)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>15.00 PSI</td>
</tr>
<tr>
<td></td>
<td>at 38 °C (100 °F)</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>at 15.6 °C (60.1 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>7.280 MG/L</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 0.84</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Medium: Water</td>
</tr>
<tr>
<td></td>
<td>slightly soluble</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>0.285 cSt</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>(Air = 1.0)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Percent volatile</td>
<td>&gt; 99 %</td>
</tr>
</tbody>
</table>

#### 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.

- **Possibility of hazardous reactions**
  - **Conditions to avoid**: Heat, flames and sparks.
  - **Materials to avoid**: May react with oxygen and strong oxidizing agents, such as
### SAFETY DATA SHEET

**Dimethyl Sulfide**

**Version 2.0**  
**Revision Date 2018-05-03**

<table>
<thead>
<tr>
<th>Hazardous decomposition products</th>
<th>Chlorates, nitrates, peroxides, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon oxides</td>
<td>Sulfur oxides</td>
</tr>
<tr>
<td>Other data</td>
<td>No decomposition if stored and applied as directed.</td>
</tr>
</tbody>
</table>

### SECTION 11: Toxicological information

#### Acute oral toxicity

Dimethyl Sulfide  
**LD50:** > 2.000 mg/kg  
**Species:** Rat  
**Method:** OECD Test Guideline 423

#### Acute inhalation toxicity

Dimethyl Sulfide  
**LC50:** 102 mg/l  
**Exposure time:** 4 h  
**Species:** Rat  
**Sex:** male and female  
**Test atmosphere:** gas  
**Method:** OECD Test Guideline 403

#### Acute dermal toxicity

Dimethyl Sulfide  
**LD50:** > 2.000 mg/kg  
**Method:** OECD Test Guideline 402

#### Skin irritation

Dimethyl Sulfide  
No skin irritation

#### Eye irritation

Dimethyl Sulfide  
May irritate eyes.

#### Sensitization

Dimethyl Sulfide  
Did not cause sensitization on laboratory animals.

#### Repeated dose toxicity

Dimethyl Sulfide  
**Species:** Rat  
**Application Route:** Oral diet  
**Dose:** 0, 2.5, 25, 250 mg/kg bw/day  
**Exposure time:** 14 wk  
**Number of exposures:** daily  
**NOEL:** 250 mg/kg
Species: Rat, Male and female  
Sex: Male and female  
Application Route: inhalation (vapor)  
Dose: 0, 0.310, 0.964, 2.783 mg/l  
Exposure time: 13 wk (6 h)  
Number of exposures: 7 d/wk  
NOEL: 2,783 mg/l  
Method: OECD Guideline 413  
Information given is based on data obtained from similar substances.

**Developmental Toxicity**

Dimethyl Sulfide  
Species: Rat  
Application Route: oral gavage  
Dose: 100, 500, 1000 mg/kg  
Exposure time: GD 6 - 19  
Number of exposures: daily  
Test period: 20 d  
Method: OECD Guideline 414  
NOAEL Teratogenicity: 1.000 mg/kg  
NOAEL Maternal: 1.000 mg/kg

**CMR effects**

Dimethyl Sulfide  
Aspiration toxicity: May be harmful if swallowed and enters airways.  
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. In vivo tests 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.

Dimethyl Sulfide  
Further information: Solvents may degrease the skin.

**SECTION 12: Ecological information**

**Toxicity to fish**

Dimethyl Sulfide  
LC50: 213 mg/l  
Exposure time: 96 h  
Species: Oncorhynchus mykiss (rainbow trout)  
Method: OECD Test Guideline 203

**Toxicity to daphnia and other aquatic invertebrates**

Dimethyl Sulfide  
EC50: 29 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
static test Method: OECD Test Guideline 202
Toxicity to algae

Dimethyl Sulfide

IC50: > 113.7 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (algae)
Method: OECD Test Guideline 201

Biodegradability

Dimethyl Sulfide

Result: Readily biodegradable.
77%
Method: OECD Test Guideline 301

Ecotoxicology Assessment

Acute aquatic toxicity

Dimethyl Sulfide

Harmful to aquatic life.

Results of PBT assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Additional ecological information

Harmful to aquatic life.

SECTION 13: Disposal considerations

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

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

Product

The product should not be allowed to enter drains, water courses or the soil. 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. Do not burn, or use a cutting torch on, the empty drum.

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

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, packing group, safety instructions, and hazard statements).

SDS Number: 100000013358
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)**
UN1164, DIMETHYL SULFIDE, 3, II

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**
UN1164, DIMETHYL SULPHIDE, 3, II, (-37 °C)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**
UN1164, DIMETHYL SULPHIDE, 3, II

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**
UN1164, DIMETHYL SULPHIDE, 3, II, (D/E)

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**
UN1164, DIMETHYL SULPHIDE, 3, II

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**
UN1164, DIMETHYL SULPHIDE, 3, II

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

**SECTION 15: Regulatory information**

**National legislation**

**Chemical Safety Assessment**

**Ingredients** : dimethyl sulphide

**Major Accident Hazard Legislation**

8
Quantity 1: 10 t
Quantity 2: 50 t

96/82/EC Update: 2003
Extremely flammable

ZEU_SEVES3 Update: FLAMMABLE LIQUIDS
P5c
Quantity 1: 5.000 t
Quantity 2: 50.000 t

**Water contaminating class** : WGK 2 water endangering

SDS Number:100000013358 12/25
SAFETY DATA SHEET

Dimethyl Sulfide

Version 2.0
Revision Date 2018-05-03

(Germany)

Notification status
Europe REACH : On the inventory, or in compliance with the inventory
United States of America (USA) : On the inventory, or in compliance with the inventory
TSCA
Canada DSL : On the inventory, or in compliance with the inventory
Australia AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Korea KECI : On the inventory, or in compliance with the inventory
Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 1
Fire Hazard: 3
Reactivity Hazard: 0

Further information
Legacy SDS Number : 61250

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

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</td>
</tr>
<tr>
<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>LOEL</td>
<td>Lowest Observed Effect Level</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
</tbody>
</table>

SDS Number: 100000013358 13/25
**Dimethyl Sulfide**

**Version 2.0**

<table>
<thead>
<tr>
<th>EOSCA</th>
<th>European Oilfield Specialty Chemicals Association</th>
<th>PEL</th>
<th>Permissible Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
</tr>
<tr>
<td>&gt;=</td>
<td>Greater Than or Equal To</td>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
</tr>
<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>ENCS</td>
<td>Japan, Inventory of Existing and New Chemical Substances</td>
<td>TSCA</td>
<td>Toxic Substance Control Act</td>
</tr>
<tr>
<td>KECI</td>
<td>Korea, Existing Chemical Inventory</td>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
</tr>
<tr>
<td>&lt;=</td>
<td>Less Than or Equal To</td>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Full text of H-statements referred to under sections 2 and 3.**

**H225** Highly flammable liquid and vapor.
# Dimethyl Sulfide

**Version 2.0**  
**Revision Date 2018-05-03**

## Annex

1. **Short title of Exposure Scenario:** Distribution

<table>
<thead>
<tr>
<th>Main User Groups</th>
<th>Sector of use</th>
<th>Process category</th>
<th>Environmental release category</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites</td>
<td>SU3: Industrial Manufacturing (all)</td>
<td>PROC1: Use in closed process, no likelihood of exposure</td>
<td>ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7: Manufacture of substances, Formulation of preparations, Formulation in materials, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in inclusion into or onto a matrix, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids, Industrial use of monomers for manufacture of thermoplastics, Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers, Industrial use of substances in closed systems</td>
<td>Distribution of Substance: loading (including marine vessel/barge, rail/road car IBC loading), and repacking including drums and small packs of substance, including its distribution and associated laboratory activities.</td>
</tr>
</tbody>
</table>

2. **Contributing scenario controlling environmental exposure for:**
   ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7: Manufacture of substances, Formulation of preparations, Formulation in materials, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in inclusion into or onto a matrix, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids, Industrial use of monomers for manufacture of thermoplastics, Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers, Industrial use of substances in closed systems
**Dimethyl Sulfide**

**Environment factors not influenced by risk management**
- **Flow rate**: 18,000 m³/d
- **Dilution Factor (River)**: 10
- **Dilution Factor (Coastal Areas)**: 100

**Other given operational conditions affecting environmental exposure**
- **Number of emission days per year**: 300
- **Emission or Release Factor: Air**: 0.01 %
- **Emission or Release Factor: Water**: 0.001 %
- **Emission or Release Factor: Soil**: 0.001 %

**Technical conditions and measures / Organizational measures**
- **Air**: Treat air emission to provide the required removal efficiency of (%): (Effectiveness: > 99.9 %)
- **Water**: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): (Effectiveness: > 99.9 %)
- **Remarks**: Negligible wastewater emissions as process operates without water contact.

**Conditions and measures related to municipal sewage treatment plant**
- **Remarks**: Not applicable as there is no release to wastewater.

**Conditions and measures related to external treatment of waste for disposal**
- **Remarks**: External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**
- **Recovery Methods**: External recovery and recycling of waste should comply with applicable local and/or national regulations.

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15:** Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Use as laboratory reagent

**Amount used**
- **Remarks**: Not applicable

**3. Exposure estimation and reference to its source**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Compartiment</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>Risk characterization ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7</td>
<td>EUSES</td>
<td></td>
<td></td>
<td>Air</td>
<td>0.000204</td>
<td>µg/m³</td>
<td></td>
</tr>
</tbody>
</table>

SDS Number: 100000013358 16/25
### Dimethyl Sulfide

**SAFETY DATA SHEET**

**Dimethyl Sulfide**

**Version 2.0**

**Revision Date 2018-05-03**

<table>
<thead>
<tr>
<th></th>
<th>Freshwater</th>
<th>Marine water</th>
<th>Freshwater sediment</th>
<th>Marine sediment</th>
<th>Agricultural soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>µg/L</td>
<td>0.000188</td>
<td>0.0000656</td>
<td>0.000264</td>
<td>0.000120</td>
<td>0.0000234</td>
</tr>
<tr>
<td>µg/kg</td>
<td>0.000003</td>
<td></td>
<td>0.000001</td>
<td>0.000046</td>
<td>0.000004</td>
</tr>
</tbody>
</table>

**ERC1**: Manufacture of substances  
**ERC2**: Formulation of preparations  
**ERC3**: Formulation in materials  
**ERC4**: Industrial use of processing aids in processes and products, not becoming part of articles  
**ERC5**: Industrial use resulting in inclusion into or onto a matrix  
**ERC6a**: Industrial use resulting in manufacture of another substance (use of intermediates)  
**ERC6b**: Industrial use of reactive processing aids  
**ERC6c**: Industrial use of monomers for manufacture of thermopastics  
**ERC6d**: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers  
**ERC7**: Industrial use of substances in closed systems

---

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

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. RMMs and OCs are described in adequate documentation at site level and efficiency is checked on a regular basis.

**1. Short title of Exposure Scenario: Formulation**

- **Main User Groups**: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites  
- **Sector of use**: SU3, SU 10: Industrial Manufacturing (all), Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)  
- **Process category**: PROC1: Use in closed process, no likelihood of exposure  
  PROC2: Use in closed, continuous process with occasional controlled exposure  
  PROC3: Use in closed batch process (synthesis or formulation)  
  PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
  PROC5: Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;  
  PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
  PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
  PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
  PROC15: Use as laboratory reagent

- **Environmental release category**: ERC2: Formulation of preparations

**SDS Number**: 100000013358

17/25
Further information: Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials, transfers, mixing, large and small scale packing, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC2: Formulation of preparations

Environment factors not influenced by risk management
- Flow rate: 18,000 m³/d
- Dilution Factor (River): 10
- Dilution Factor (Coastal Areas): 100

Other given operational conditions affecting environmental exposure
- Number of emission days per year: 300
- Emission or Release Factor: Air: 2.5 %
- Emission or Release Factor: Water: 0.1 %
- Emission or Release Factor: Soil: 0.01 %

Technical conditions and measures / Organizational measures
- Air: Treat air emission to provide the required removal efficiency of (%): (Effectiveness: 97.5 %)
- Water: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ız (%): (Effectiveness: > 99.9 %)
- Remarks: Negligible wastewater emissions as process operates without water contact.

Conditions and measures related to municipal sewage treatment plant
- Remarks: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal
- Remarks: External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste
- Recovery Methods: External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Use as laboratory reagent
### 3. Exposure estimation and reference to its source

**Environment**

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Compartments</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>Risk characterization ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC2</td>
<td>EUSES</td>
<td></td>
<td>Air</td>
<td>0.00185 mg/m³</td>
<td></td>
<td>0.000325</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Freshwater</td>
<td>0.00093 mg/L</td>
<td></td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marine water</td>
<td>0.0013 mg/L</td>
<td></td>
<td>0.0501</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>0.00131 mg/kg</td>
<td></td>
<td>0.718</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0.00187 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Agricultural soil</td>
<td>0.000428 mg/kg</td>
<td></td>
<td>0.0673</td>
</tr>
</tbody>
</table>

ERC2: Formulation of preparations

### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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.

RMMs and OCs are described in adequate documentation at site level and efficiency is checked on a regular basis.

1. Short title of Exposure Scenario: **Use as an intermediate**

<table>
<thead>
<tr>
<th>Main User Groups</th>
<th>SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector of use</td>
<td>SU3, SU8, SU9: Industrial Manufacturing (all), Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals</td>
</tr>
<tr>
<td>Process category</td>
<td>PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC15: Use as laboratory reagent</td>
</tr>
<tr>
<td>Environmental release category</td>
<td>ERC6a: Industrial use resulting in manufacture of another</td>
</tr>
</tbody>
</table>
Dimethyl Sulfide

Further information:
Use as an isolated intermediate not under strictly controlled conditions

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Environment factors not influenced by risk management
Flow rate: 18,000 m³/d
Dilution Factor (River): 10
Dilution Factor (Coastal Areas): 100

Other given operational conditions affecting environmental exposure
Number of emission days per year: 300
Emission or Release Factor: Air: 0,5 %
Emission or Release Factor: Water: 0,05 %
Emission or Release Factor: Soil: 0,1 %

Technical conditions and measures / Organizational measures
Air: Treat air emission to provide the required removal efficiency of (%): (Effectiveness: 99,5 %)
Water: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Effectiveness: 99,9 %)
Remarks: Negligible wastewater emissions as process operates without water contact.

Conditions and measures related to municipal sewage treatment plant
Remarks: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal
Remarks: External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste
Recovery Methods: External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory reagent

Amount used
Remarks: Not applicable
3. Exposure estimation and reference to its source

Environment

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Compartment</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>Risk characterization ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC6a</td>
<td>EUSES</td>
<td></td>
<td>Air</td>
<td></td>
<td>0.000503 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Freshwater</td>
<td></td>
<td>0.000767 mg/L</td>
<td>0.0265</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marine water</td>
<td></td>
<td>0.0011 mg/L</td>
<td>0.379</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td></td>
<td>0.00108 mg/kg</td>
<td>0.0413</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marine sediment</td>
<td></td>
<td>0.00154 mg/kg</td>
<td>0.592</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Agricultural soil</td>
<td></td>
<td>0.000331 mg/kg</td>
<td>0.0521</td>
</tr>
</tbody>
</table>

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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.

RMMs and OCs are described in adequate documentation at site level and efficiency is checked on a regular basis.

1. Short title of Exposure Scenario: **Use as an intermediate in pharma**

Main User Groups: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use: SU3, SU8, SU9: Industrial Manufacturing (all), Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals

Process category: PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC15: Use as laboratory reagent

Environmental release category: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Further information: Use as an isolated intermediate not under strictly controlled conditions
2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Environment factors not influenced by risk management

Flow rate: 18.000 m³/d
Dilution Factor (River): 10
Dilution Factor (Coastal Areas): 100

Other given operational conditions affecting environmental exposure

Number of emission days per year: 300
Emission or Release Factor: Air: 0,5 %
Emission or Release Factor: Water: 0,1 %
Emission or Release Factor: Soil: 0,1 %

Technical conditions and measures / Organizational measures

Air: Treat air emission to provide the required removal efficiency of (%)RAINT: (Effectiveness: 99,5 %)
Water: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ζ (%): (Effectiveness: 99,9 %)
Remarks: Negligible wastewater emissions as process operates without water contact.

Conditions and measures related to municipal sewage treatment plant

Remarks: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

Remarks: External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods: External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory reagent

Amount used

Remarks: Not applicable

3. Exposure estimation and reference to its source

Environment

SDS Number: 100000013358 22/25
**Dimethyl Sulfide**

**Version 2.0**

**Revision Date 2018-05-03**

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Compartment</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>Risk characterization ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC6a</td>
<td>EUSES</td>
<td>Air</td>
<td></td>
<td></td>
<td>0,0000459 mg/m³</td>
<td>0,00482</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater</td>
<td></td>
<td></td>
<td>0,000140 mg/L</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td></td>
<td></td>
<td>0,0002 mg/L</td>
<td>0,069</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td></td>
<td></td>
<td>0,000196 mg/kg</td>
<td>0,00753</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td></td>
<td></td>
<td>0,000281 mg/kg</td>
<td>0,108</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agricultural soil</td>
<td></td>
<td></td>
<td>0,0000589 mg/kg</td>
<td>0,00927</td>
</tr>
</tbody>
</table>

**ERC6a**: Industrial use resulting in manufacture of another substance (use of intermediates)

---

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

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.

RMMs and OCs are described in adequate documentation at site level and efficiency is checked on a regular basis.

1. **Short title of Exposure Scenario**: *Injection as odorant in fuels – industrial*

   - **Main User Groups**: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
   - **Sector of use**: SU3: Industrial Manufacturing (all)
   - **Process category**: PROC1: Use in closed process, no likelihood of exposure
     - PROC2: Use in closed, continuous process with occasional controlled exposure
     - PROC3: Use in closed batch process (synthesis or formulation)
     - PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
     - PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
     - PROC15: Use as laboratory reagent
   - **Environmental release category**: ERC7: Industrial use of substances in closed systems
   - **Further information**: Covers injection as odourant in fuel and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

---

**2.1 Contributing scenario controlling environmental exposure for: ERC7: Industrial use of substances in closed systems**

**Environment factors not influenced by risk management**

**SDS Number**: 100000013358
Dimethyl Sulfide

Flow rate: 18,000 m³/d
Dilution Factor (River): 10
Dilution Factor (Coastal Areas): 100

Other given operational conditions affecting environmental exposure
Number of emission days per year: 300
Emission or Release Factor: Air: 0,25 %
Emission or Release Factor: Water: 0,001 %
Emission or Release Factor: Soil: 0 %

Technical conditions and measures / Organizational measures
Air: Treat air emission to provide the required removal efficiency of (%): (Effectiveness: 99,7 %)
Water: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): (Effectiveness: 99,9 %)
Remarks: Negligible wastewater emissions as process operates without water contact.

Conditions and measures related to municipal sewage treatment plant
Remarks: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal
Remarks: External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste
Recovery Methods: External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory reagent

Amount used
Remarks: Not applicable

3. Exposure estimation and reference to its source

<table>
<thead>
<tr>
<th>Environment</th>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Compartment</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>Risk characterization ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC7</td>
<td>EUSES</td>
<td>Air</td>
<td>0,000152 mg/m³</td>
<td></td>
<td></td>
<td>0,000032</td>
<td>0,00460</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater</td>
<td>0,00943 µg/L</td>
<td></td>
<td></td>
<td>0,000032</td>
<td>0,00460</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,0000133 mg/L</td>
<td></td>
<td></td>
<td>0,0000508</td>
<td>0,00718</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>0,0000133 mg/kg</td>
<td></td>
<td></td>
<td>0,000032</td>
<td>0,00460</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,0000187 mg/kg</td>
<td></td>
<td></td>
<td>0,000032</td>
<td>0,00460</td>
</tr>
</tbody>
</table>

SDS Number:100000013358
ERC7: Industrial use of substances in closed systems

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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.

RMMs and OCs are described in adequate documentation at site level and efficiency is checked on a regular basis.