



# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Reference number: EIGA073

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

#### 1.1. Product identifier

|                               |  |
|-------------------------------|--|
| Product form                  | : Substance  |
| Name                          | : hydrogen sulphide  |
| EC Index-No.                  | : 016-001-00-4   |
| EC-No.                        | : 231-977-3  |
| CAS-No.                       | : 7783-06-4  |
| REACH registration No.        | : 01-2119445737-29   |
| Product code                  | : 000010021749   |
| Formula                       | : H <sub>2</sub> S   |
| Synonyms                      | : Hydrogen sulfide (H <sub>2</sub> S) / Hydrogen sulphide / Sulfur hydride / Dihydrogen sulphide / Hydrogen sulphide, hydrogen sulfide / Sulfane |
| Other means of identification | : hydrogen sulphide 2.5  |

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

##### 1.2.1. Relevant identified uses

|                              |   |
|------------------------------|---|
| Relevant identified uses     | : Industrial use. Perform risk assessment prior to use.<br>Test gas/Calibration gas.<br>Chemical reaction / Synthesis.<br>Laboratory use.<br>Use for manufacture of electronic/photovoltaic components. |
| Use of the substance/mixture | : Use for metal treatment.<br>Odour agents  |

| Title  | Life cycle stage                      | Use descriptors  |
|--|---------------------------------------|--|
| (ES Ref.: ES0110021749)<br>(ES Ref.: ES0210021749) | Industrial, Professional, Formulation | SU0, SU4, SU8, SU9, SU11, SU15, SU16,<br>PC2, PC14, PC21, PC33, PROC1, PROC3,<br>PROC8b, PROC9, PROC15, PROC16, ERC2,<br>ERC6a, ERC6b, ERC7, ERC8b |

Full text of use descriptors: see section 16

##### 1.2.2. Uses advised against

|                      |  |
|----------------------|--|
| Uses advised against | : Consumer use.<br>Uses other than those listed above are not supported, contact your supplier for more information on other uses. |
|----------------------|--|

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

Linde Gas GmbH  
Carl-von-Linde-Platz 1  
A-4651 Stadl-Paura  
Austria  
T +43 50 4273  
[office@at.linde-gas.com](mailto:office@at.linde-gas.com)

#### 1.4. Emergency telephone number

|                  |   |
|------------------|---|
| Emergency number | : UMCO/NCEC: +44 1865 407333 (English); +49 89 220 61012 (German) |
|------------------|---|

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

|                       |  |      |
|-----------------------|--|------|
| Physical hazards      | Flammable gases, Category 1A   | H220 |
|                       | Gases under pressure : Liquefied gas   | H280 |
| Health hazards        | Acute toxicity (inhalation:gas) Category 2   | H330 |
|                       | Serious eye damage/eye irritation, Category 2  | H319 |
|                       | Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation | H335 |
|                       |  |      |
| Environmental hazards | Hazardous to the aquatic environment – Acute Hazard, Category 1                            | H400 |

Full text of H- and EUH-statements: see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H220 - Extremely flammable gas.  
H280 - Contains gas under pressure; may explode if heated.  
H330 - Fatal if inhaled.  
H335 - May cause respiratory irritation.  
H400 - Very toxic to aquatic life.  
H319 - Causes serious eye irritation.

Precautionary statements (CLP)

- Prevention

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260 - Do not breathe gas, vapours.  
P273 - Avoid release to the environment.

- Response

: P304+P340+P315 - IF INHALED : Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice.  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - In case of leakage, eliminate all ignition sources.

- Storage

: P403 - Store in a well-ventilated place.  
P405 - Store locked up.

#### 2.3. Other hazards

Other hazards

: Contact with liquid may cause cold burns/frostbite. Not classified as PBT or vPvB. Not classified as PMT or vPvM . The substance/mixture has no endocrine disrupting properties.

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

| Name              | Product identifier  | %   | Classification according to Regulation (EC) No. 1272/2008 [CLP]<br>ATE, EUH-statements, M-Factors   |
|-------------------|---|-----|---|
| hydrogen sulphide | CAS-No.: 7783-06-4<br>EC-No.: 231-977-3<br>EC Index-No.: 016-001-00-4<br>REACH-no: 01-2119445737-29 | 100 | Flam. Gas 1A, H220<br>Press. Gas (Liq.), H280<br>Acute Tox. 2 (Inhalation:gas), H330<br>(ATE=356 ppmv/4h)<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Aquatic Acute 1, H400 |

Full text of H- and EUH-statements: see section 16

Contains no other components or impurities which will influence the classification of the product.

#### 3.2. Mixtures

Not applicable

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                                       |  |
|---------------------------------------|--|
| First-aid measures after inhalation   | : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped. |
| First-aid measures after skin contact | : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.  |
| First-aid measures after eye contact  | : Immediately flush eyes thoroughly with water for at least 15 minutes.  |
| First-aid measures after ingestion    | : Ingestion is not considered a potential route of exposure.   |

#### 4.2. Most important symptoms and effects, both acute and delayed

|   |  |
|---|--|
| Most important symptoms and effects, both acute and delayed | May cause damaging effects to central nervous system, metabolism and gastrointestinal tract.<br>Prolonged exposure to small concentrations may result in pulmonary oedema.<br>May cause irritation to cornea (with temporary disturbance to vision).<br>May cause irritation to the respiratory tract, sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing.<br>See section 11. |
|---|--|

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

Obtain medical assistance.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | : Dry powder. Water spray or fog. Carbon dioxide. Shutting off the source of the gas is the preferred method of control. Be aware of the risk of formation of static electricity with the use of CO2 extinguishers. Do not use them in places where a flammable atmosphere may be present. |
| Unsuitable extinguishing media | : Do not use water jet to extinguish.  |

#### 5.2. Special hazards arising from the substance or mixture

|                            |  |
|----------------------------|--|
| Reactivity in case of fire | : No reactivity hazard other than the effects described in sub-sections below. |
| Specific hazards           | : Exposure to fire may cause containers to rupture/explode.                    |

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Hazardous combustion products : Sulphur dioxide.

### 5.3. Advice for firefighters

Specific methods : Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.  
Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.  
If possible, stop flow of product.  
Use water spray or fog to knock down fire fumes if possible.  
Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus.  
Standard EN 943-2: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Gas-tight chemical protective suits for emergency teams.  
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Act in accordance with local emergency plan. Try to stop release. Evacuate area. Eliminate ignition sources. Ensure adequate air ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Stay upwind. See section 8 of the SDS for more information on personal protective equipment.

#### 6.1.2. For emergency responders

Emergency procedures : Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. See section 5.3 of the SDS for more information.

### 6.2. Environmental precautions

Try to stop release. Reduce vapour with fog or fine water spray.

### 6.3. Methods and material for containment and cleaning up

Methods and material for containment and cleaning up : Ventilate area.

### 6.4. Reference to other sections

See also sections 8 and 13.

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Safe use of the product

- : Take precautionary measures against static discharge.
- Keep away from ignition sources (including static discharges).
- Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
- Purge air from system before introducing gas.
- Avoid exposure, obtain special instructions before use.
- Do not smoke while handling product.
- Avoid suck back of water, acid and alkalis.
- Only experienced and properly instructed persons should handle gases under pressure.
- Ensure the complete gas system was (or is regularly) checked for leaks before use.
- Installation of a cross purge assembly between the container and the regulator is recommended.
- Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.
- Consider the use of only non-sparking tools.
- The product must be handled in accordance with good industrial hygiene and safety procedures.
- Consider pressure relief device(s) in gas installations.
- Do not breathe gas.
- Avoid release of product into work area.
- Ensure equipment is adequately earthed.

##### Safe handling of the gas receptacle

- : Do not allow backfeed into the container.
- Protect containers from physical damage; do not drag, roll, slide or drop.
- When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.
- Leave valve protection caps, when provided, in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
- If user experiences any difficulty operating valve discontinue use and contact supplier.
- Never attempt to repair or modify container valves or safety relief devices.
- Damaged valves should be reported immediately to the supplier.
- Keep container valve outlets clean and free from contaminants particularly oil and water.
- Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
- Close container valve after each use and when empty, even if still connected to equipment.
- Never attempt to transfer gases from one cylinder/container to another.
- Never use direct flame or electrical heating devices to raise the pressure of a container.
- Do not remove or deface labels provided by the supplier for the identification of the content of the container.
- Suck back of water into the container must be prevented.
- Open valve slowly to avoid pressure shock.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Conditions for safe storage, including any incompatibilities

- : Segregate from oxidant gases and other oxidants in store.
- All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.
- Store locked up.
- Observe all regulations and local requirements regarding storage of containers.
- Containers should not be stored in conditions likely to encourage corrosion.
- Container valve guards or caps, when provided, should be in place.
- Containers should be stored in the vertical position and properly secured to prevent them from falling over.
- Stored containers should be periodically checked for general condition and leakage.
- Keep container below 50°C in a well ventilated place.
- Store containers in location free from fire risk and away from sources of heat and ignition.
- Keep away from combustible materials.

#### 7.3. Specific end use(s)

None.

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### 8.1.1 National occupational exposure and biological limit values

| hydrogen sulphide (7783-06-4)                      |                                  |
|--|----------------------------------|
| EU - Indicative Occupational Exposure Limit (IOEL) |                                  |
| Local name   | Hydrogen sulphide                |
| IOEL TWA   | 7 mg/m <sup>3</sup>              |
|  | 5 ppm                            |
| IOEL STEL  | 14 mg/m <sup>3</sup>             |
|  | 10 ppm                           |
| Regulatory reference                               | COMMISSION DIRECTIVE 2009/161/EU |
| Austria - Occupational Exposure Limits             |                                  |
| Local name   | Schwefelwasserstoff              |
| MAK (OEL TWA)                                      | 7 mg/m <sup>3</sup>              |
|  | 5 ppm                            |
| Regulatory reference                               | BGBl. II Nr. 330/2024            |

##### 8.1.2. Recommended monitoring procedures

No additional information available

##### 8.1.3. Air contaminants formed

No additional information available

##### 8.1.4. DNEL and PNEC

| hydrogen sulphide (7783-06-4)            |                      |
|--|----------------------|
| DNEL/DMEL (Workers)                      |                      |
| Acute - systemic effects, inhalation     | 14 mg/m <sup>3</sup> |
| Acute - local effects, inhalation        | 14 mg/m <sup>3</sup> |
| Long-term - systemic effects, inhalation | 7 mg/m <sup>3</sup>  |
| Long-term - local effects, inhalation    | 7 mg/m <sup>3</sup>  |
| PNEC (Water)                             |                      |
| PNEC aqua (freshwater)                   | 0.03 µg/L            |
| PNEC aqua (marine water)                 | 0.003 µg/L           |
| PNEC aqua (intermittent, freshwater)     | 0.19 µg/L            |

##### 8.1.5. Control banding

No additional information available

#### 8.2. Exposure controls

##### Appropriate engineering controls

###### Appropriate engineering controls:

Provide adequate general and local exhaust ventilation. Consider the use of a work permit system e.g. for maintenance activities. Product to be handled in a closed system and under strictly controlled conditions. Preferably use permanent leak-tight installations (e.g. welded pipes). Gas detectors should be used when toxic gases may be released. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available).

##### Personal protection equipment

###### Personal protective equipment:

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.

**Personal protective equipment symbol(s):**



### Eye and face protection

#### Eye protection:

Wear goggles and a face shield when transfilling or breaking transfer connections. Provide readily accessible eye wash stations and safety showers. Standard EN 166 - Personal eye-protection - specifications

### Skin protection

#### Hand protection:

Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risks, performance level 1 or higher. Recommended types include wrist gloves from leather or synthetic material with equivalent performance, fabric gloves, fabric gloves with leather palms. Wear cold insulating gloves when transfilling or breaking transfer connections. Standard EN 511 - Cold insulating gloves, performance level 1 or higher. Recommended types include insulated gauntlets or gloves specifically selected to prevent liquid penetration and ingress of cryogenic liquids and to provide mechanical resistance. Permeation time: minimum >480min long term exposure : material / thickness Nitrile rubber (NBR) / 0,7 [mm]

### Respiratory protection

#### Respiratory protection:

Recommended: Filter B (grey). Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems. Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known. Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Gas filters do not protect against oxygen deficiency. Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks . Keep self contained breathing apparatus readily available for emergency use.

### Thermal hazards

#### Thermal hazard protection:

None in addition to the above sections.

### Environmental exposure controls

#### Environmental exposure controls:

Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

#### Other information:

Consider the use of flame resistant anti-static safety clothing. Standard EN ISO 14116 - Limited flame spread materials. Standard EN 1149-5 - Protective clothing: Electrostatic properties. Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                       |   |
|-----------------------|---|
| Appearance            |   |
| Physical state        | : Gas   |
| Colour                | : Colourless.   |
| Form                  | : Liquefied gas   |
| Odour                 | : Rotten eggs. Odour can persist.                                       |
| Odour threshold       | : Odour threshold is subjective and inadequate to warn of overexposure. |
| Melting point         | : -86 °C  |
| Freezing point        | : Not applicable  |
| Boiling point         | : -60.2 °C  |
| Flammability          | : Extremely flammable gas.  |
| Oxidising properties  | : No oxidising properties.  |
| Explosive limits      | : Not available   |
| Lower explosion limit | : 3.9 vol %   |
| Upper explosion limit | : 45.5 vol %  |

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

|   |  |
|---|--|
| Flash point                                     | : Not applicable for gases and gas mixtures.   |
| Auto-ignition temperature                       | : 270 °C   |
| Decomposition temperature                       | : Not applicable.  |
| pH  | : Not applicable for gases and gas mixtures.   |
| Viscosity, kinematic                            | : No reliable data available   |
| Viscosity, dynamic                              | : 0.013 mPa·s @ 25 °C; Experimental result, Not specified  |
| Solubility in water                             | : 3980 mg/l  |
| Partition coefficient n-octanol/water (Log Kow) | : Not applicable for inorganic products.   |
| Partition coefficient n-octanol/water (Log Pow) | : Not applicable for gas mixtures.   |
| Vapour pressure                                 | : 18.8 bar(a)  |
| Vapour pressure at 50°C                         | : 36.4 bar(a)  |
| Critical pressure                               | : 8940 kPa   |
| Density   | : Not applicable for gases and gas mixtures.   |
| Relative density                                | : 0.92   |
| Relative vapour density at 20°C                 | : Not applicable.  |
| Relative gas density                            | : 1.2  |
| Particle characteristics                        | : Not applicable<br>Not applicable for gases and gas mixtures.<br>Nanoforms are not relevant for gases and gas mixtures. |

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

|                      |          |
|----------------------|----------|
| Tci                  | : 8.9 %  |
| Critical temperature | : 100 °C |

#### 9.2.2. Other safety characteristics

|                        |  |
|------------------------|--|
| Molecular mass         | : 34 g/mol   |
| Gas group              | : Press. Gas (Liq.)  |
| Additional information | : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level. |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Can form explosive mixture with air. May react violently with oxidants.

### 10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Avoid moisture in installation systems.

### 10.5. Incompatible materials

With water causes rapid corrosion of some metals. Moisture. Air, Oxidisers. For additional information on compatibility refer to ISO 11114.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

|                         |                     |
|-------------------------|---------------------|
| Acute toxicity          | : Fatal if inhaled. |
| Acute toxicity (oral)   | : Not classified    |
| Acute toxicity (dermal) | : Not classified    |



# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Acute toxicity (inhalation) : Inhalation:gas: Fatal if inhaled.

### hydrogen sulphide (7783-06-4)

|                             |                                      |
|-----------------------------|--------------------------------------|
| LC50 Inhalation - Rat [ppm] | 712 ppm/1h (ADR)<br>440 ppm/4h (CLP) |
|-----------------------------|--------------------------------------|

Skin corrosion/irritation : No known effects from this product.  
pH: Not applicable for gases and gas mixtures.

Serious eye damage/irritation : Causes serious eye irritation.  
pH: Not applicable for gases and gas mixtures.

Respiratory or skin sensitisation : No known effects from this product.

Germ cell mutagenicity : No known effects from this product.

Carcinogenicity : No known effects from this product.

Reproductive toxicity : Not classified

Toxic for reproduction : Fertility : No known effects from this product.

Toxic for reproduction : unborn child : No known effects from this product.

### hydrogen sulphide (7783-06-4)

|       |        |
|-------|--------|
| NOAEC | 80 ppm |
|-------|--------|

STOT-single exposure : Irritation to the respiratory tract. May cause respiratory irritation.

STOT-repeated exposure : Damage to central nervous system.

Aspiration hazard : Not applicable for gases and gas mixtures.

### hydrogen sulphide (7783-06-4)

|                      |                            |
|----------------------|----------------------------|
| Viscosity, kinematic | No reliable data available |
|----------------------|----------------------------|

## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance/mixture has no endocrine disrupting properties.

### 11.2.2. Other information

Other information : The substance/mixture has no endocrine disrupting properties.

## SECTION 12: Ecological information

### 12.1. Toxicity

Assessment : Very toxic to aquatic life.

Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Not rapidly degradable

### hydrogen sulphide (7783-06-4)

|                                 |               |
|---------------------------------|---------------|
| LC50 96 h - Fish [mg/l]         | 0.007 - 0.019 |
| EC50 48h - Daphnia magna [mg/l] | 0.12 mg/l     |
| EC50 72h - Algae [mg/l]         | 1.87 mg/l     |

### 12.2. Persistence and degradability

### hydrogen sulphide (7783-06-4)

|            |  |
|------------|--|
| Assessment | Not applicable for inorganic products. |
|------------|--|

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### 12.3. Bioaccumulative potential

#### hydrogen sulphide (7783-06-4)

|   |  |
|---|--|
| Partition coefficient n-octanol/water (Log Pow) | Not applicable for gas mixtures.       |
| Partition coefficient n-octanol/water (Log Kow) | Not applicable for inorganic products. |
| Assessment                                      | No data available.                     |

### 12.4. Mobility in soil

#### hydrogen sulphide (7783-06-4)

|            |  |
|------------|--|
| Assessment | Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely. |
|------------|--|

### 12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB.

### 12.6. Endocrine disrupting properties

Other adverse effects : Not classified as PMT or vPvM.  
Assessment : The substance/mixture has no endocrine disrupting properties.

### 12.7. Other adverse effects

Other adverse effects : Not classified as PMT or vPvM.  
Effect on the ozone layer : No effect on the ozone layer.  
Effect on global warming : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Gas may be scrubbed in alkaline solution under controlled conditions to avoid violent reaction. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Contact supplier if guidance is required. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.eu> for more guidance on suitable disposal methods. Must not be discharged to atmosphere. Return unused product in original container to supplier.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 04 \*: Gases in pressure containers (including halons) containing hazardous substances.

HP Code : HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.  
HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.  
HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye.  
HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

### 13.2. Additional information

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






# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

| ADR  | IMDG   | IATA  | ADN   | RID  |
|--|--|---|---|--|
| <b>14.1. UN number or ID number</b>  |  |   |   |  |
| UN 1053  | UN 1053  | UN 1053   | UN 1053   | UN 1053  |
| <b>14.2. UN proper shipping name</b>   |  |   |   |  |
| HYDROGEN SULPHIDE  | HYDROGEN SULPHIDE  | Hydrogen sulphide   | HYDROGEN SULPHIDE   | HYDROGEN SULPHIDE  |
| <b>Transport document description</b>  |  |   |   |  |
| UN 1053 HYDROGEN SULPHIDE, 2.3 (2.1), (B/D), ENVIRONMENTALLY HAZARDOUS             | UN 1053 HYDROGEN SULPHIDE, 2.3 (2.1), MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS   | UN 1053 Hydrogen sulphide, 2.3 (2.1), ENVIRONMENTALLY HAZARDOUS                   | UN 1053 HYDROGEN SULPHIDE, 2.3 (2.1), ENVIRONMENTALLY HAZARDOUS                     | UN 1053 HYDROGEN SULPHIDE, 2.3 (2.1), ENVIRONMENTALLY HAZARDOUS                      |
| <b>14.3. Transport hazard class(es)</b>  |  |   |   |  |
| 2.3 (2.1)  | 2.3 (2.1)  | 2.3 (2.1)   | 2.3 (2.1)   | 2.3 (2.1)  |
|  |  |  |  |  |
| <b>14.4. Packing group</b>   |  |   |   |  |
| Not applicable   | Not applicable   | Not applicable  | Not applicable  | Not applicable   |
| <b>14.5. Environmental hazards</b>   |  |   |   |  |
| Dangerous for the environment: Yes   | Dangerous for the environment: Yes<br>Marine pollutant: Yes                        | Dangerous for the environment: Yes  | Dangerous for the environment: Yes  | Dangerous for the environment: Yes   |
| No supplementary information available   |  |   |   |  |

### 14.6. Special precautions for user

Special transport precautions

: Avoid transport on vehicles where the load space is not separated from the driver's compartment, Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency, Before transporting product containers: - Ensure there is adequate ventilation, - Ensure that containers are firmly secured, - Ensure valve is closed and not leaking, - Ensure valve outlet cap nut or plug (where provided) is correctly fitted, - Ensure valve protection device (where provided) is correctly fitted.

#### Overland transport

Classification code (ADR) : 2TF  
Limited quantities (ADR) : 0  
Excepted quantities (ADR) : E0  
Packing instructions (ADR) : P200  
Mixed packing provisions (ADR) : MP9  
Portable tank and bulk container instructions (ADR) : (M)  
Tank code (ADR) : PxDH(M)  
Tank special provisions (ADR) : TA4, TT9, TT10  
Vehicle for tank carriage : FL  
Transport category (ADR) : 1

# hydrogen sulphide

## Safety Data Sheet

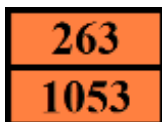
according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV10, CV36

Special provisions for carriage - Operation (ADR) : S2, S14

Hazard identification number (Kemler No.) : 263

Orange plates :



Tunnel restriction code (ADR) : B/D

### Transport by sea

Limited quantities (IMDG) : 0

Excepted quantities (IMDG) : E0

Packing instructions (IMDG) : P200

EmS-No. (Fire) : F-D

EmS-No. (Spillage) : S-U

Stowage category (IMDG) : D

Stowage and handling (IMDG) : SW2

Properties and observations (IMDG) : Liquefied, flammable, toxic gas with a foul odour. Heavier than air (1.2).

### Air transport

PCA Limited quantities (IATA) : FORBIDDEN

PCA limited quantity max net quantity (IATA) : FORBIDDEN

PCA packing instructions (IATA) : FORBIDDEN

PCA max net quantity (IATA) : FORBIDDEN

CAO packing instructions (IATA) : FORBIDDEN

CAO max net quantity (IATA) : FORBIDDEN

Special provisions (IATA) : A2

ERG code (IATA) : 10P

### Inland waterway transport

Classification code (ADN) : 2TF

Limited quantities (ADN) : 0

Excepted quantities (ADN) : E0

Equipment required (ADN) : PP, EP, EX, TOX, A

Ventilation (ADN) : VE01, VE02

Number of blue cones/lights (ADN) : 2

### Rail transport

Classification code (RID) : 2TF

Special provisions (RID) : 274

Limited quantities (RID) : 0

Excepted quantities (RID) : E0

Packing instructions (RID) : P200

Mixed packing provisions (RID) : MP9

Portable tank and bulk container instructions (RID) : (M)

Tank codes for RID tanks (RID) : PxDH(M)

Special provisions for RID tanks (RID) : TU38, TE22, TE25, TA4, TT9, TT10, TM6

Transport category (RID) : 1

Special provisions for carriage - Loading, unloading and handling (RID) : CW9, CW10, CW36

Hazard identification number (RID) : 263

### 14.7. Maritime transport in bulk according to IMO instruments

IBC code : Not applicable.

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

###### REACH Annex XVII (Restriction List)

| EU restriction list (REACH Annex XVII) |                   |  |
|--|-------------------|--|
| Reference code                         | Applicable on     | Entry title or description   |
| 40.                                    | hydrogen sulphide | Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not. |

###### REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

###### REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

###### PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

###### POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

###### Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

###### VOC Directive (2004/42)

Restrictions on use : None.

###### Seveso Directive (Disaster Risk Reduction)

Seveso Directive : 2012/18/EU (Seveso III) : Listed.

| Seveso III Part II (Named dangerous substances) | Qualifying quantity (tonnes) |            |
|---|------------------------------|------------|
|   | Lower-tier                   | Upper-tier |
| Hydrogen sulphide                               | 5                            | 20         |

###### Explosives Precursors Regulation (EU 2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

###### Drug Precursors Regulation (EC 273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

##### 15.1.2. National regulations

Ensure all national/local regulations are observed.

Safety data sheet in accordance with commission regulation (EU) No 2020/878.

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work

Directive 2016/425/EEC on personal protective equipment

Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 2015/830.

#### 15.2. Chemical safety assessment

A CSA has been carried out.

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 16: Other information

#### Indication of changes:

Safety data sheet in accordance with commission regulation (EU) No 2020/878.

#### Abbreviations and acronyms:

|         |   |
|---------|---|
| ADN     | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways   |
| ADR     | ADR - Agreement concerning the International Carriage of Dangerous Goods by Road                  |
| ATE     | ATE - Acute Toxicity Estimate   |
| BLV     | Biological limit value  |
| BOD     | Biochemical oxygen demand (BOD)   |
| CAO     | Cargo Aircraft only / Cargo Aircraft only   |
| CAS-No. | Chemical Abstract Service number  |
| CLP     | CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                 |
| COD     | Chemical oxygen demand (COD)  |
| CSA     | CSA - Chemical Safety Assessment  |
| DMEL    | Derived Minimal Effect level  |
| DNEL    | Derived-No Effect Level   |
| EC50    | Median effective concentration  |
| EC      | European Inventory of Existing Commercial Chemical Substances                                     |
| ED      | Endocrine disruptor   |
| EINECS  | EINECS - European Inventory of Existing Commercial Chemical Substances                            |
| EN      | European Standard   |
| IARC    | International Agency for Research on Cancer   |
| IATA    | International Air Transport Association   |
| IMDG    | International Maritime Dangerous Goods  |
| IOELV   | Indicative Occupational Exposure Limit Value  |
| LC50    | Median lethal concentration   |
| LD50    | Median lethal dose  |
| LOAEL   | Lowest Observed Adverse Effect Level  |
| NOAEC   | No-Observed Adverse Effect Concentration  |
| NOAEL   | No-Observed Adverse Effect Level  |
| NOEC    | No-Observed Effect Concentration  |
| N.O.S.  | Not Otherwise Specified   |
| OECD    | Organisation for Economic Co-operation and Development  |
| OEL     | Occupational Exposure Limit   |
| PBT     | Persistent Bioaccumulative Toxic  |
| PCA     | Passenger and Cargo Aircraft / Passenger and Cargo Aircraft                                       |
| PNEC    | Predicted No-Effect Concentration   |
| PPE     | PPE - Personal Protection Equipment   |
| REACH   | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID     | Regulations concerning the International Carriage of Dangerous Goods by Rail                      |

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### Abbreviations and acronyms:

|         |   |
|---------|---|
| RMM     | RMM - Risk Management Measures  |
| STP     | Sewage treatment plant  |
| ThOD    | Theoretical oxygen demand (ThOD)  |
| TLM     | Median Tolerance Limit  |
| TRGS    | Technical Rules for Hazardous Substances  |
| STOT-RE | Specific Target Organ Toxicity-Repeated Exposure                                    |
| STOT-SE | Specific Target Organ Toxicity-Single Exposure                                      |
| UFI     | Unique Formula Identifier   |
| UN      | UN - United Nations   |
| VOC     | Volatile Organic Compounds  |
| vPvB    | Very Persistent and Very Bioaccumulative  |
| WGK     | Water Hazard Class  |
| ADR     | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE     | Acute Toxicity Estimate   |
| CLP     | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008         |

|                   |   |
|-------------------|---|
| Training advice   | : Ensure operators understand the flammability hazard. Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard.   |
| Other information | : Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP). Key literature references and sources of data are maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at <a href="http://www.Eiga.eu">http://www.Eiga.eu</a> . |

### Full text of H- and EUH-statements:

|                                  |  |
|----------------------------------|--|
| Acute Tox. 2<br>(Inhalation:gas) | Acute toxicity (inhalation:gas) Category 2   |
| Aquatic Acute 1                  | Hazardous to the aquatic environment – Acute Hazard, Category 1                            |
| Eye Irrit. 2                     | Serious eye damage/eye irritation, Category 2  |
| Flam. Gas 1A                     | Flammable gases, Category 1A   |
| Press. Gas (Liq.)                | Gases under pressure : Liquefied gas   |
| STOT SE 3                        | Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation |
| H220                             | Extremely flammable gas.   |
| H280                             | Contains gas under pressure; may explode if heated.  |
| H319                             | Causes serious eye irritation.   |
| H330                             | Fatal if inhaled.  |
| H335                             | May cause respiratory irritation.  |
| H400                             | Very toxic to aquatic life.  |

### Full text of use descriptors

|       |   |
|-------|---|
| ERC2  | Formulation into mixture  |
| ERC6a | Use of intermediate   |
| ERC6b | Use of reactive processing aid at industrial site (no inclusion into or onto article) |
| ERC7  | Use of functional fluid at industrial site  |

# hydrogen sulphide

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| Full text of use descriptors |  |
|------------------------------|--|
| ERC8b                        | Widespread use of reactive processing aid (no inclusion into or onto article, indoor)  |
| PC14                         | Metal surface treatment products   |
| PC2                          | Adsorbents   |
| PC21                         | Laboratory chemicals   |
| PC33                         | Semiconductors   |
| PROC1                        | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions                                 |
| PROC15                       | Use as laboratory reagent  |
| PROC16                       | Use of fuels   |
| PROC3                        | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC8b                       | Transfer of substance or mixture (charging and discharging) at dedicated facilities  |
| PROC9                        | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  |
| SU0                          | Other  |
| SU11                         | Manufacture of rubber products   |
| SU15                         | Manufacture of fabricated metal products, except machinery and equipment   |
| SU16                         | Manufacture of computer, electronic and optical products, electrical equipment   |
| SU4                          | Manufacture of food products   |
| SU8                          | Manufacture of bulk, large scale chemicals (including petroleum products)  |
| SU9                          | Manufacture of fine chemicals  |

The classification complies with

DISCLAIMER OF LIABILITY

: ATP 12

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press.

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Safety Data Sheet (SDS), EU AT

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

### Annex to the safety data sheet

This Annex documents the Exposure Scenarios (ESs) related to the identified uses of the registered substance. The ESs detail protective measures for workers and the environment in addition to those described in sections 7, 8, 11, 12 and 13 of the SDS that are required to ensure that the potential exposure to workers and the environment remains within acceptable levels for each of the identified uses.

#### Table of contents of the Annex



# hydrogen sulphide

## Annex to the safety data sheet: Exposure scenario

Reference number: EIGA073 CAS-No.: 7783-06-4 Product form: Substance Physical state: Gas

### 1. ES0110021749: Industrial uses, closed contained conditions

#### 1.1. Title section

##### Industrial uses, closed contained conditions

ES Ref.: ES0110021749

| Environment  | Use descriptors          |
|--------------|--------------------------|
| CS0110021749 | ERC2, ERC6a, ERC6b, ERC7 |

| Worker       | Use descriptors                     |
|--------------|-------------------------------------|
| CS0210021749 | PROC1, PROC3, PROC8b, PROC9, PROC16 |

#### 1.2. Conditions of use affecting exposure

##### 1.2.1. Control of environmental exposure: ERC2, ERC6a, ERC6b, ERC7

|       |   |
|-------|---|
| ERC2  | Formulation into mixture  |
| ERC6a | Use of intermediate   |
| ERC6b | Use of reactive processing aid at industrial site (no inclusion into or onto article) |
| ERC7  | Use of functional fluid at industrial site  |

| Product (article) characteristics     |  |
|---------------------------------------|--|
| Physical form of product              | See section 9 of the SDS.  |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently) |

##### Amount used, frequency and duration of use (or from service life)

|                        |              |
|------------------------|--------------|
| Annual amount per site | 50 T         |
| Batch process          | Not relevant |
| Continuous process     | 260 days/yr  |

##### Technical and organisational conditions and measures

|   |   |
|---|---|
| See chapter 8 of the safety data sheet (Environmental exposure controls). |   |
| Technical and organisational measures                                     | Closed systems are used in order to prevent unintended emissions                |
| Air   | Not relevant  |
| Soil  | Not relevant  |
| Water   | Not relevant  |
| Remarks   | Soil emission controls are not applicable as there is no direct release to soil |

##### Conditions and measures related to sewage treatment plant

|      |                                  |
|------|----------------------------------|
| Type | Municipal Sewage Treatment Plant |
|------|----------------------------------|

# hydrogen sulphide

## Annex to the safety data sheet: Exposure scenario

Reference number: EIGA073 CAS-No.: 7783-06-4 Product form: Substance Physical state: Gas

|  |   |
|--|---|
| Discharge Rate                                 | Not relevant  |
| Treatment effectiveness                        | Not relevant  |
| Sludge treatment e.g. thermal sludge reduction | Not relevant  |
| Measures to limit air emissions                | Not relevant  |
| Remarks  | Direct emissions to the municipal STP should not be made. |

| Conditions and measures related to treatment of waste (including article waste) |  |
|---|--|
| See section 13 of the SDS   | External treatment and disposal of waste should comply with applicable local and/or national regulations |
| See section 13 of the SDS   | External recovery and recycling of waste should comply with applicable local and/or national regulations |

| Other conditions affecting environmental exposure |  |
|---|--|
| Air   | 95 %   |
| Emission  | 260 days/yr<br>Continuous release                                |
| Remarks   | Closed systems are used in order to prevent unintended emissions |
| Others  | Not relevant   |
| Flow rate of receiving water at least:            | 18000 m³/d   |
| Local freshwater dilution factor:                 | Not relevant   |
| Local marine water dilution factor:               | Not relevant   |
| Others  | Assumed on-site sewage treatment plant flow                      |
| Remarks   | ≈ 2000 m³/d  |

### 1.2.2. Control of worker exposure: PROC1, PROC3, PROC8b, PROC9, PROC16

|        |  |
|--------|--|
| PROC1  | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions                                 |
| PROC3  | Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition |
| PROC8b | Transfer of substance or mixture (charging and discharging) at dedicated facilities  |
| PROC9  | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  |
| PROC16 | Use of fuels   |

| Product (article) characteristics     |  |
|---------------------------------------|--|
| Physical form of product              | See section 9 of the SDS.  |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently) |

| Amount used (or contained in articles), frequency and duration of use/exposure |  |
|--|--|
| Daily amount per site  | The actual tonnage handled per shift is not considered to influence the exposure as such for this scenario. Instead, the combination of the scale of operation and level of containment/automation (as reflected in the technical conditions) is the main determinant of the process-intrinsic emission potential. |
| Use frequency<br>Hours per shift   | 5 days/week<br>≤ 8 h   |

# hydrogen sulphide

## Annex to the safety data sheet: Exposure scenario

Reference number: EIGA073 CAS-No.: 7783-06-4 Product form: Substance Physical state: Gas

| Technical and organisational conditions and measures |   |
|--|---|
| See Section 7  |   |
| Technical measures                                   | Undertake operation under enclosed conditions |
| Organisational measures                              | See Section 7                                 |

| Conditions and measures related to personal protection, hygiene and health evaluation |  |
|---|--|
| See section 8 of the SDS for more information on personal protective equipment        |  |

| Other conditions affecting workers exposure |  |
|---|--|
| Not available                               |  |
| Indoor or outdoor use                       | Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition. Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Use of fuels |
| Others                                      | See section 8 of the SDS.  |

### **1.3. Exposure estimation and reference to its source**

#### **1.3.1. Environmental release and exposure: ERC2, ERC6a, ERC6b, ERC7**

|  |
|--|
| No exposure assessment presented for the environment |
|--|

#### **1.3.2. Worker exposure: PROC1, PROC3, PROC8b, PROC9, PROC16**

|   |
|---|
| No exposure assessment presented for human health |
|---|

### **1.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

#### **1.4.1. Environment**

|                        |  |
|------------------------|--|
| Guidance - Environment | Check that RMMs and OCs are as described above or of equivalent efficiency |
|------------------------|--|

#### **1.4.2. Health**

|                   |  |
|-------------------|--|
| Guidance - Health | Check that RMMs and OCs are as described above or of equivalent efficiency |
|-------------------|--|

# hydrogen sulphide

## Annex to the safety data sheet: Exposure scenario

Reference number: EIGA073 CAS-No.: 7783-06-4 Product form: Substance Physical state: Gas

### 2. ES0210021749: Professional uses

#### 2.1. Title section

|                          |                        |
|--------------------------|------------------------|
| <b>Professional uses</b> |                        |
| ES Ref.: ES0210021749    |                        |
| <b>Environment</b>       | <b>Use descriptors</b> |
| CS0310021749             | ERC8b                  |
| <b>Worker</b>            | <b>Use descriptors</b> |
| CS0410021749             | PROC15                 |

#### 2.2. Conditions of use affecting exposure

##### 2.2.1. Control of environmental exposure: ERC8b

|       |   |
|-------|---|
| ERC8b | Widespread use of reactive processing aid (no inclusion into or onto article, indoor) |
|-------|---|

|  |  |
|--|--|
| <b>Product (article) characteristics</b> |  |
| Physical form of product                 | See section 9 of the SDS.  |
| Concentration of substance in product    | Covers percentage substance in the product up to 100 % (unless stated differently) |

|  |              |
|--|--------------|
| <b>Amount used, frequency and duration of use (or from service life)</b> |              |
| Annual amount per site   | 10 kg        |
| Batch process  | 260 days/yr  |
| Continuous process   | Not relevant |

|   |   |
|---|---|
| <b>Technical and organisational conditions and measures</b>               |   |
| See chapter 8 of the safety data sheet (Environmental exposure controls). |   |
| Technical and organisational measures                                     | Closed systems are used in order to prevent unintended emissions                |
| Air   | Not relevant  |
| Soil  | Not relevant  |
| Water   | Not relevant  |
| Remarks   | Soil emission controls are not applicable as there is no direct release to soil |

|  |                                  |
|--|----------------------------------|
| <b>Conditions and measures related to sewage treatment plant</b> |                                  |
| Type   | Municipal Sewage Treatment Plant |
| Discharge Rate   | Not relevant                     |
| Treatment effectiveness  | Not relevant                     |
| Sludge treatment e.g. thermal sludge reduction                   | Not relevant                     |
| Measures to limit air emissions                                  | Not relevant                     |

# hydrogen sulphide

## Annex to the safety data sheet: Exposure scenario

Reference number: EIGA073 CAS-No.: 7783-06-4 Product form: Substance Physical state: Gas

|         |   |
|---------|---|
| Remarks | Direct emissions to the municipal STP should not be made. |
|---------|---|

| Conditions and measures related to treatment of waste (including article waste) |  |
|---|--|
| See section 13 of the SDS   | External treatment and disposal of waste should comply with applicable local and/or national regulations |
| See section 13 of the SDS   | External recovery and recycling of waste should comply with applicable local and/or national regulations |

| Other conditions affecting environmental exposure |  |
|---|--|
| Emission  | 260 days/yr<br>Intermittent release                              |
| Air   | 95 %   |
| Remarks   | Closed systems are used in order to prevent unintended emissions |
| Others  | Not relevant   |
| Flow rate of receiving water at least:            | 18000 m <sup>3</sup> /d  |
| Local freshwater dilution factor:                 | Not relevant   |
| Local marine water dilution factor:               | Not relevant   |
| Others  | Assumed on-site sewage treatment plant flow                      |
| Remarks   | ≈ 2000 m <sup>3</sup> /d   |

### 2.2.2. Control of worker exposure: PROC15

|        |                           |
|--------|---------------------------|
| PROC15 | Use as laboratory reagent |
|--------|---------------------------|

| Product (article) characteristics     |  |
|---------------------------------------|--|
| Physical form of product              | See section 9 of the SDS.  |
| Concentration of substance in product | Covers percentage substance in the product up to 100 % (unless stated differently) |

| Amount used (or contained in articles), frequency and duration of use/exposure |  |
|--|--|
| Daily amount per site  | The actual tonnage handled per shift is not considered to influence the exposure as such for this scenario. Instead, the combination of the scale of operation and level of containment/automation (as reflected in the technical conditions) is the main determinant of the process-intrinsic emission potential. |
| Use frequency<br>Hours per shift   | 5 days/week<br>≤ 8 h   |

| Technical and organisational conditions and measures |   |
|--|---|
| See Section 7  |   |
| Technical measures                                   | Undertake operation under enclosed conditions |
| Organisational measures                              | See Section 7                                 |

| Conditions and measures related to personal protection, hygiene and health evaluation |  |
|---|--|
| See section 8 of the SDS for more information on personal protective equipment        |  |

# hydrogen sulphide

## Annex to the safety data sheet: Exposure scenario

Reference number: EIGA073 CAS-No.: 7783-06-4 Product form: Substance Physical state: Gas

| Other conditions affecting workers exposure |                           |
|---|---------------------------|
| Not available                               | Not available             |
| Indoor use                                  | Use as laboratory reagent |
| Others                                      | See section 8 of the SDS. |

### **2.3. Exposure estimation and reference to its source**

#### **2.3.1. Environmental release and exposure: ERC8b**

|  |
|--|
| No exposure assessment presented for the environment |
|--|

#### **2.3.2. Worker exposure: PROC15**

|   |
|---|
| No exposure assessment presented for human health |
|---|

### **2.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

#### **2.4.1. Environment**

|                        |  |
|------------------------|--|
| Guidance - Environment | Check that RMMs and OCs are as described above or of equivalent efficiency |
|------------------------|--|

#### **2.4.2. Health**

|                   |  |
|-------------------|--|
| Guidance - Health | Check that RMMs and OCs are as described above or of equivalent efficiency |
|-------------------|--|

**End of document**