Hydrogen Sulfide
Safety Data Sheet
According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada’s
Revision Date: 01/18/2017  Date of Issue: 05/05/2015  Version: 2.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Substance
Product Name: Hydrogen Sulfide
Formula: H₂S

Intended Use of the Product

Purification of acids, and wastewater and in the manufacture of sulfur and organosulfur compounds.

Use Of The Substance/Mixture: Industrial use.

Name, Address, and Telephone of the Responsible Party

Manufacturer
CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number: Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification
Flam. Gas 1 H220
Compressed gas H280
Acute Tox. 2 H330
( Inhalation:gas)
Aquatic Acute 1 H400
Liquefied gas H280

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling
Hazard Pictograms

Signal Word : Danger
Hazard Statements
H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.
H330 - Fatal if inhaled.
H400 - Very toxic to aquatic life.

Precautionary Statements
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 - Do not breathe vapors, mist, or spray.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for
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breathing.
P310 - Immediately call a POISON CENTER or doctor.
P320 - Specific treatment is urgent (see section 4 on this SDS).
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - In case of leakage, eliminate all ignition sources.
P391 - Collect spillage.
P403 - Store in a well-ventilated place.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

Other Hazards
Odor Threshold Data
0.13 ppm – minimal perceptible odor
0.77 ppm – faint but perceptible odor
4.6 ppm – easily detectable moderate odor
27 ppm – strong unpleasant odor, but not intolerable
100 ppm - loss of sense of smell
Odor should not be used as a warning since the gas may deaden the sense of smell.

Unknown acute toxicity
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Name</th>
<th>Product Identifier</th>
<th>%*</th>
<th>GHS Ingredient Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide</td>
<td>(CAS No) 7783-06-4</td>
<td>99.9</td>
<td>Flam. Gas 1, H220</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Liquefied gas, H280</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 2 (Inhalation:gas), H330</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1, H400</td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: If exposed or concerned: Seek medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person.

Inhalation: Using proper respiratory protection, immediately move the exposed person to fresh air. Keep at rest and in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Seek immediate medical advice. Symptoms may be delayed.

Skin Contact: If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Fatal if inhaled. Contact with gas escaping the container can cause frostbite.
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**Inhalation:** Odor should not be used as a warning since the gas may deaden the sense of smell. Fatal if inhaled. Corrosive to mucus membranes. Causes severe respiratory irritation if inhaled. Symptoms may include burning of nose and throat, constriction of airway, difficulty breathing, shortness of breath, bronchial spasms, chest pain, and pink frothy sputum. May cause pulmonary edema. Symptoms may be delayed.

**Skin Contact:** May cause frostbite on contact with the liquefied gas.

**Eye Contact:** Contact with the liquefied gas causes frostbite. Corrosive to mucus membranes.

**Ingestion:** Ingestion is an unlikely route of exposure for a gas.

**Chronic Symptoms:** Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**
If medical advice is needed, have product container or label at hand.

### SECTION 5: FIRE-FIGHTING MEASURES

**Extinguishing Media**

- **Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.
- **Unsuitable Extinguishing Media:** Do not use a heavy water stream.

**Special Hazards Arising From the Substance or Mixture**

- **Fire Hazard:** Extremely flammable gas.
- **Explosion Hazard:** May form flammable/explosive vapor-air mixture.
- **Reactivity:** Reacts violently with (strong) acids/bases. Alkali metals.

**Advice for Firefighters**

- **Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.
- **Firefighting Instructions:** Keep upwind. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leaking gas fire, eliminate all ignition sources if safe to do so.
- **Protection During Firefighting:** Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities if liquid enters sewers or waterways. Do not enter fire area without proper protective equipment, including respiratory protection.
- **Hazardous Combustion Products:** Sulphur oxides.
- **Other Information:** Do not allow run-off from fire fighting to enter drains or water courses.

**Reference to Other Sections**
Refer to Section 9 for flammability properties.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

- **General Measures:** Use special care to avoid static electric charges. Eliminate every possible source of ignition. Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking. Do not allow product to spread into the environment.
- **For Non-Emergency Personnel**
  - **Protective Equipment:** Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection. Use appropriate personal protective equipment (PPE).
- **For Emergency Personnel**
  - **Protective Equipment:** Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection. Equip cleanup crew with proper protection.
  - **Emergency Procedures:** Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area.

**Environmental Precautions**
If spill could potentially enter any waterway, including intermittent dry creeks, contact the U.S. COAST GUARD NATIONAL RESPONSE CENTER at 800-424-8802. In case of accident or road spill notify CHEMTREC at 800-424-9300 (in USA) or CANUTEC at 613-996-6666.
Methods and Materials for Containment and Cleaning Up

For Containment: Stop leak without risks if possible.

Methods for Cleaning Up: Ventilate area. Pump into a labelled inert emergency tank. Absorb the remainder with an inert absorbent material.

Reference to Other Sections
See Section 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable. Extremely flammable gas.

Precautions for Safe Handling: Avoid all eyes and skin contact and do not breathe gas. Wear recommended personal protective equipment. Ensure there is adequate ventilation. Keep away from heat and open flame. Employ good maintenance practices to prevent leaks. Use good process control measures to prevent releases. Do not breathe gas. Use only outdoors or in a well-ventilated area. Keep away from Sparks, heat, open flame and other sources of ignition. - No smoking.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

Storage Conditions: Detached outside storage is preferable. Store in a well-ventilated place. Keep container tightly closed. Keep in fireproof place.


Storage Area: Store in dry, cool area. Store in a well-ventilated place. Keep away from combustible materials. Store locked up.

Specific End Use(s)

Purification of acids, and wastewater and in the manufacture of sulfur and organosulfur compounds. Industrial use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

<table>
<thead>
<tr>
<th>Hydrogen sulfide (7783-06-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico OEL TWA (mg/m³)</td>
<td>14 mg/m³</td>
</tr>
<tr>
<td>Mexico OEL TWA (ppm)</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Mexico OEL STEL (mg/m³)</td>
<td>21 mg/m³</td>
</tr>
<tr>
<td>Mexico OEL STEL (ppm)</td>
<td>15 ppm</td>
</tr>
<tr>
<td>USA ACGIH ACGIH TWA (ppm)</td>
<td>1 ppm</td>
</tr>
<tr>
<td>USA ACGIH ACGIH STEL (ppm)</td>
<td>5 ppm</td>
</tr>
<tr>
<td>USA OSHA OSHA PEL (Ceiling) (ppm)</td>
<td>20 ppm</td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (ceiling) (mg/m³)</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (ceiling) (ppm)</td>
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<td>USA IDLH US IDLH (ppm)</td>
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<td>Alberta OEL Ceiling (ppm)</td>
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<tr>
<td>Alberta OEL TWA (ppm)</td>
<td>10 ppm</td>
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<tr>
<td>British Columbia OEL Ceiling (ppm)</td>
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<td>Manitoba OEL STEL (ppm)</td>
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</tr>
<tr>
<td>Manitoba OEL TWA (ppm)</td>
<td>1 ppm</td>
</tr>
<tr>
<td>New Brunswick OEL STEL (mg/m³)</td>
<td>21 mg/m³</td>
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</table>
Hydrogen Sulfide
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<table>
<thead>
<tr>
<th>Province</th>
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<th>OEL TWA (mg/m³)</th>
<th>OEL TWA (ppm)</th>
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<tbody>
<tr>
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<td>15 ppm</td>
<td>14 mg/m³</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
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<td></td>
<td>1 ppm</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>5 ppm</td>
<td></td>
<td>1 ppm</td>
</tr>
<tr>
<td>Nunavut</td>
<td>15 ppm</td>
<td></td>
<td>1 ppm</td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>15 ppm</td>
<td></td>
<td>10 ppm</td>
</tr>
<tr>
<td>Ontario</td>
<td>15 ppm</td>
<td></td>
<td>10 ppm</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>5 ppm</td>
<td></td>
<td>1 ppm</td>
</tr>
<tr>
<td>Québec</td>
<td>21 mg/m³</td>
<td>15 ppm</td>
<td></td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>15 ppm</td>
<td></td>
<td>10 ppm</td>
</tr>
<tr>
<td>Yukon</td>
<td>27 mg/m³</td>
<td>15 ppm</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Yukon</td>
<td>15 mg/m³</td>
<td></td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

Exposure Controls

Appropriate Engineering Controls: Gas detectors should be used when flammable gases/vapors may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Not generally required. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.


Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Impermeable protective gloves.

Eye Protection: Chemical goggles or face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: A NIOSH-approved self-contained breathing apparatus (SCBA) operated in a pressure demand or other positive pressure mode or equivalent respirator should be used in situations of oxygen deficiency (concentration less than 19.5%), unknown exposure concentrations, conditions that are immediately dangerous to life or health (IDLH), or when exposure levels are above ACGIH or OSHA exposure limits. A respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2-1992 or MSHA 30 CFR 72.710 (where applicable) requirements must be followed whenever workplace conditions warrant respirator use.

Thermal Hazard Protection: Wear suitable protective clothing.

Other Information: When using, do not eat, drink or smoke

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State: Gas
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| Appearance | Colorless |
| Odor | Rotten eggs |
| Odor Threshold | 0.13 ppm – minimal perceptible odor 0.77 ppm – faint but perceptible odor 4.6 ppm – easily detectable moderate odor 27 ppm – strong unpleasant odor, but not intolerable 100 ppm - loss of sense of smell |
| Odor should not be used as a warning since the gas may deaden the sense of smell. |
| pH | 0.3 |
| Evaporation Rate | Not available |
| Melting Point | -82.77 °C (-117°F) |
| Freezing Point | Not available |
| Boiling Point | -59.99 °C (-76°F) |
| Flash Point | Not available |
| Auto-ignition Temperature | molec wt 34.08 g/mole |
| Decomposition Temperature | Not available |
| Flammability (solid, gas) | Not available |
| Lower Flammable Limit | 4 % |
| Upper Flammable Limit | 44 % |
| Vapor Pressure | 250 kPa (1875 mm Hg) |
| Relative Vapor Density at 20°C | 1.19 air=1 |
| Relative Density | Not available |
| Specific Gravity | Not available |
| Solubility | Water: 437 mL of gas in 100 mL of water at 0°C; 186 mL of gas in 100 mL of water at 40°C. Organic solvent: Soluble in hydrocarbon solvents, ether, alcohol, glycerol and carbon disulfide. |
| Partition Coefficient: N-Octanol/Water | Not available |
| Viscosity | Not available |

**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity:** Reacts violently with. (strong) acids/bases. Alkali metals.

**Chemical Stability:** Stable at standard temperature and pressure. Extremely flammable gas.

**Possibility of Hazardous Reactions:** Hazardous polymerization can occur in contact with certain incompatible materials.

**Conditions to Avoid:** Protect from moisture. Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

**Incompatible Materials:** Avoid contact with most metals, carbides, hydrogen sulfide, turpentine, organic acids, combustibles (wood, paper, cotton) and other organic and readily oxidized materials. Strong acids. Strong bases. Strong oxidizers.

**Hazardous Decomposition Products:** Under conditions of fire this material may produce: Sulphur oxides. Carbon oxides (CO, CO₂). Thermal decomposition generates: Corrosive vapors.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Information on Toxicological Effects - Product**

**Acute Toxicity (Oral):** Not classified

**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Inhalation:gas: Fatal if inhaled.

**LD50 and LC50 Data:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Sulfide</td>
<td>444.44 ppmV/4h</td>
</tr>
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</table>

**Skin Corrosion/Irritation:** Not classified.

**pH:** 0.3
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**Eye Damage/Irritation:** Not classified.
**pH:** 0.3
**Respiratory or Skin Sensitization:** Not classified
**Germ Cell Mutagenicity:** Not classified
**Carcinogenicity:** Not classified
**Specific Target Organ Toxicity (Repeated Exposure):** Not classified
**Reproductive Toxicity:** Not classified
**Specific Target Organ Toxicity (Single Exposure):** Not classified
**Aspiration Hazard:** Not classified
**Symptoms/Effects After Inhalation:** Odor should not be used as a warning since the gas may deaden the sense of smell. Fatal if inhaled. Corrosive to mucus membranes. Causes severe respiratory irritation if inhaled. Symptoms may include burning of nose and throat, constriction of airway, difficulty breathing, shortness of breath, bronchial spasms, chest pain, and pink frothy sputum. May cause pulmonary edema. Symptoms may be delayed.
**Symptoms/Effects After Skin Contact:** May cause frostbite on contact with the liquefied gas.
**Symptoms/Effects After Eye Contact:** Contact with the liquefied gas causes frostbite. Corrosive to mucus membranes.
**Symptoms/Effects After Ingestion:** Ingestion is an unlikely route of exposure for a gas.
**Chronic Symptoms:** Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage.

**Information on Toxicological Effects - Ingredient(s)**

**LD50 and LC50 Data:**

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<thead>
<tr>
<th>Substance</th>
<th>LD50 LC50 Data</th>
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<tbody>
<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
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<tr>
<td>LC50 Inhalation Rat</td>
<td>444 ppm/4h</td>
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</table>

**SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity**

**Ecology - General:** Very toxic to aquatic life.

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 Data</th>
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<tbody>
<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
<td></td>
</tr>
<tr>
<td>LC50 Fish 1</td>
<td>0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])</td>
</tr>
<tr>
<td>LC50 Fish 2</td>
<td>0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
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</table>

**Persistence and Degradability**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and Degradability</th>
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</thead>
<tbody>
<tr>
<td>Hydrogen Sulfide</td>
<td>Product is biodegradable. Not established. May cause long-term adverse effects in the environment.</td>
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**Bioaccumulative Potential**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative Potential</th>
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<tbody>
<tr>
<td>Hydrogen Sulfide</td>
<td>Not expected to bioaccumulate. Not established.</td>
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<table>
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<th>Substance</th>
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<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
<td>(no bioaccumulation expected)</td>
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**Mobility in Soil**  

<table>
<thead>
<tr>
<th>Substance</th>
<th>Mobility in Soil</th>
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<tr>
<td>Hydrogen sulfide</td>
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**Other Adverse Effects**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Sulfide</td>
<td>Avoid release to the environment.</td>
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</tbody>
</table>

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations

**Additional Information:** Handle empty containers with care because residual vapors are flammable.

**Ecology - Waste Materials:** Hazardous waste due to toxicity. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

**SECTION 14: TRANSPORT INFORMATION**

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.
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*When shipped in accordance with US DOT 49 CFR part 171.4(c ) and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.
**When shipped in accordance with the Canada Transport of Dangerous Goods Regulations part 1.45.1 and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail

<table>
<thead>
<tr>
<th>TRANSPORTATION CLASSIFICATION</th>
<th>DOT</th>
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<th>IMDG</th>
<th>IATA</th>
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<tr>
<td>Identification Number</td>
<td>UN1053</td>
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<tr>
<td>Proper Shipping Name</td>
<td>HYDROGEN SULFIDE</td>
<td>HYDROGEN SULPHIDE</td>
<td>HYDROGEN SULPHIDE</td>
<td>FORBIDDEN</td>
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<tr>
<td>Transport Hazard Class(es)</td>
<td>2.3 (2.1)</td>
<td>2.3 (2.1)</td>
<td>2.3 (2.1)</td>
<td>2.3</td>
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<tr>
<td>Environmental Hazards</td>
<td>Marine Pollutant : Yes*</td>
<td>Marine Pollutant : Yes**</td>
<td>Marine Pollutant : Yes</td>
<td>Marine Pollutant: N/A</td>
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<tr>
<td>Emergency Response</td>
<td>ERG Number : 117</td>
<td>ERAP Index: 500</td>
<td>EMS: F-D, S-U</td>
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<tr>
<td>Additional Information</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
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SECTION 15: REGULATORY INFORMATION

US Federal Regulations

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>CERCLA RQ</th>
<th>EPCRA 304 RQ</th>
<th>SARA 302 TPQ</th>
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<td>Hydrogen sulfide (7783-06-4)</td>
<td>100 lb</td>
<td>100 lb</td>
<td>500 lb</td>
<td>Yes</td>
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</tbody>
</table>

SARA 311/312

Hydrogen Sulfide
Immediate (acute) health hazard. Delayed (chronic) health hazard. Reactive hazard. Fire hazard

US TSCA Flags  Not present

US State Regulations

California Proposition 65

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>Carcinogenicity</th>
<th>Developmental Toxicity</th>
<th>Female Reproductive Toxicity</th>
<th>Male Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

State Right-To-Know Lists

Hydrogen sulfide (7783-06-4)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Hydrogen sulfide (7783-06-4)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>Australia AICS</th>
<th>Turkey CICR</th>
<th>Korea ECL</th>
<th>EU EINECS</th>
<th>EU ELINCS</th>
<th>EU SVHC</th>
<th>EU NLP</th>
<th>Mexico INSQ</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>China IECSC</th>
<th>Japan ENCS</th>
<th>Japan ISHL</th>
<th>Japan PDSCL</th>
<th>Japan PRTR</th>
<th>Philippines PICCS</th>
<th>New Zealand NZIOC</th>
<th>US TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date: 01/18/2017
Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada’s Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

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

NFPA 704

NFPA Health Hazard: 4 - Very short exposure could cause death or serious residual injury even though prompt medical attention was given.

NFPA Fire Hazard: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA Reactivity Hazard: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS Rating

Health: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability: 4 Severe Hazard

Physical: 0 Minimal Hazard

PPE: See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
AGCIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RO - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
EC50 - Median effective concentration
ENCS - Japan Ind. Safety and Health Law
ECSC - European Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
NISOH - National Institute for Occupational Safety and Health
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NLP - Europe No Longer Polymers List
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
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Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA’S “Right to Know” (29 CFR 1910.1200) and Canada’s WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.