

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

SECTION 1. IDENTIFICATION

Product name : Hydrogen Sulfide

Product code : X2620

Manufacturer or supplier's details

Company : **Vertex Refining Alabama LLC**
400 Industrial Pkwy
Ext. East
Saraland, AL 36571
SDS Request : 251-679-7180
Customer Service : 251-679-7180

Emergency telephone number

Chemtrec Domestic (24 hr) : 1-800-424-9300
Chemtrec International (24 hr) : 1-703-527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Refinery stream.

Restrictions on use : This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable gases : Category 1
Gases under pressure : Liquefied gas
Acute toxicity : Category 2
Serious eye damage/eye irritation : Category 2A

GHS label elements

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

Hazard pictograms

:



Signal word

:

Danger

Hazard statements

:

PHYSICAL HAZARDS:
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
HEALTH HAZARDS:
H330 Fatal if inhaled.
H319 Causes serious eye irritation.
ENVIRONMENTAL HAZARDS:
H400 Very toxic to aquatic life.

Precautionary statements

:

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P243 Take precautionary measures against static discharge.
P260 Do not breathe gas.
P284 In case of inadequate ventilation wear respiratory protection.

Response:

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P310 Immediately call a POISON CENTER or doctor/ physician.
P320 Specific treatment is urgent (see supplemental first aid instructions on this label).

Storage:

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Other hazards which do not result in classification

High gas concentrations will displace available air; unconsciousness and death may occur suddenly from lack of oxygen.

Exposure to rapidly expanding gases may cause frost burns to eyes and/or skin.

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Hydrogen sulphide is highly toxic and may be fatal if inhaled.

Irritating to eyes.

Hydrogen sulphide (H₂S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.

The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Hydrogen sulfide	hydrogen sulphide (Gas)	7783-06-4	<= 100

SECTION 4. FIRST-AID MEASURES

- If inhaled : Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardiopulmonary Resuscitation (CPR) as required and transport to the nearest medical facility.
Casualties suffering ill effects as a result of exposure to hydrogen sulphide should be removed to fresh air.
- In case of skin contact : Do not remove clothing that adheres to skin due to freezing. In the event of frostbite, slowly warm the exposed area by rinsing with warm water. Otherwise:
Obtain medical treatment immediately.
Contaminated clothing may be a fire hazard and therefore should be soaked with water before being removed.
Loosen tight clothing.
Keep warm and at rest.
- In case of eye contact : In the event of frostbite, slowly warm the exposed area by rinsing with warm water. Otherwise:
Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist transport to the nearest medical facility for additional treatment.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
- If swallowed : In the unlikely event of ingestion, obtain medical attention immediately.
- Most important symptoms and effects, both acute and delayed : Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

appropriate personal protective equipment according to the incident, injury and surroundings.

Indication of any immediate medical attention and special treatment needed : Hydrogen sulphide (H₂S) - CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER: Oxygen therapy. Consult a Poison Control Center for guidance. Treat symptomatically. Administer oxygen if necessary.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Shut off supply. If not possible and no risk to surroundings, let the fire burn itself out.
Use foam, water fog for major fires.
Use dry chemical powder, carbon dioxide, sand or earth for minor fires.

Unsuitable extinguishing media : Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire.
Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards during fire-fighting : Hazardous combustion products may include:
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
Sustained fire attack on vessels may result in a Boiling Liquid Expanding Vapor Explosion (BLEVE).
Contents are under pressure and can explode when exposed to heat or flames.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Clear fire area of all non-emergency personnel.
Keep adjacent containers cool by spraying with water.
If possible remove containers from the danger zone.
If the fire cannot be extinguished the only course of action is to evacuate immediately.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version	Revision Date:	SDS Number:	Print Date: 04/01/2022
1.0	04/01/2022	VRAM00018	Date of last issue: 04/01/2022

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- Personal precautions, protective equipment and emergency procedures : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter. Test atmosphere for flammable gas concentrations to ensure safe working conditions before personnel are allowed to enter the area.
- Environmental precautions : Use appropriate containment to avoid environmental contamination.
- Methods and materials for containment and cleaning up : Allow to evaporate. Attempt to disperse the gas or to direct its flow to a safe location, for example by using fog sprays.
- Avoid contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel. Ventilate contaminated area thoroughly. Take precautionary measures against static discharges.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet. Vapour may form an explosive mixture with air. Risk of explosion. Inform the emergency services if product enters surface water drains.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Air-dry contaminated clothing in a well-ventilated area before laundering. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Take precautionary measures against static discharges.
- Advice on safe handling : Ensure that all local regulations regarding handling and storage facilities are followed. This product is intended for use in closed systems only.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

This product can create a low temperature exposure hazard when released as a liquid.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Avoid prolonged or repeated contact with skin.
Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.
Earth all equipment.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

Avoidance of contact : Strong oxidising agents.

Product Transfer : Do not use compressed air for filling discharge or handling. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Delivery lines may become cold enough to present a cold burns hazard. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge. The inherent toxic and olfactory (sense of smell) fatiguing properties of hydrogen sulphide require that air monitoring alarms be used if concentrations are expected to reach harmful levels such as in enclosed spaces, heated transport vessels and spill or leak situations. If the air concentration exceeds 10 ppm, the area should be evacuated unless respiratory protection is in use.

Further information on storage stability : Store only in purpose-designed, appropriately labelled pressure vessels or cylinders.
Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat.
Do not store near cylinders containing compressed oxygen or other strong oxidizers.
The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.
Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers and container linings, use materials specifically approved for use with this product., Examples of suitable materials are: PA-11, PEEK, PVDF, PTFE, GRE (Epoxy), GRVE (vinyl ester), Viton (FKM), type F and GB, Neoprene (CR).
Unsuitable material: Some forms of cast iron., Examples of materials to avoid are: ABS, polymethyl methacrylate (PMMA), polyethylene (PE / HDPE), polypropylene (PP), PVC, natural rubber (NR), Nitrile (NBR) ethylene propylene rubber (EPDM), Butyl (IIR), Hypalon (CSM), polystyrene, polyvinyl chloride (PVC), polyisobutylene., For containers and container linings, aluminium should not be used if there is a risk of caustic contamination of the product.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or near containers. Containers, even those that have been emptied, can contain explosive vapours.

Specific use(s) : Not applicable.

See additional references that provide safe handling practices: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).
IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Hydrogen sulfide	7783-06-4	TWA	5 ppm 7 mg/m ³	2009/161/EU
	Further information: This value is for information where there is no national limit value available.			
Hydrogen sulfide		STEL	10 ppm 14 mg/m ³	2009/161/EU
	Further information: This value is for information where there is no national limit value available.			
Hydrogen sulfide		STEL	5 ppm	ACGIH
	Further information: Central Nervous System impairment, Upper Respiratory Tract irritation			
Hydrogen sulfide		CEIL	20 ppm	OSHA Z-2
Hydrogen sulfide		Peak	50 ppm (10 minutes once only if no other measured exposure occurs)	OSHA Z-2
Hydrogen sulfide		TWA	1 ppm	ACGIH
Hydrogen sulfide		STEL	5 ppm	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Firewater monitors and deluge systems are recommended.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or for subsequent recycle.

Do not ingest. If swallowed then seek immediate medical assistance

Personal protective equipment

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

All respiratory protection equipment and use must be in accordance with local regulations.

Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Select a filter suitable for organic gases and vapours [boiling point <65 °C (149 °F)]

Hand protection Remarks

: Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

Eye protection

: Wear safety glasses and face shield (preferably with a chin guard) if splashes are likely to occur.

Skin and body protection

: Chemical and cold resistant gloves/gauntlets, boots, and apron.

Protective measures

: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice

: Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Information on accidental release measures are to be found in section 6.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Gas.
Colour : colourless
Odour : rotten-egg like
Odour Threshold : Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

pH : Not applicable

Melting / freezing point : -86.0 °C / -122.8 °F

Boiling point/boiling range : -60.7 °C / -77.3 °F

Flash point : -83.4 °C / -118.1 °F

Evaporation rate : Data not available

Flammability (solid, gas) : Extremely flammable.

Upper explosion limit / upper flammability limit : 45 %(V)

Lower explosion limit / Lower flammability limit : 4.3 %(V)

Vapour pressure : ca. 1,740 kPa (21 °C / 70 °F)

Relative vapour density : 1.2
(Air = 1.0)

Relative density : 0.79

Density : 1.4 kg/m³ (21 °C / 70 °F)

Solubility(ies)

 Water solubility : Partially soluble.

 Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : Data not available

Auto-ignition temperature : 270 °C / 518 °F

Decomposition temperature : Data not available

Viscosity

 Viscosity, dynamic : Data not available

 Viscosity, kinematic : Data not available

Explosive properties : Not applicable

Oxidizing properties : Data not available

Surface tension : Data not available

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version	Revision Date:	SDS Number:	Print Date: 04/01/2022
1.0	04/01/2022	VRAM00018	Date of last issue: 04/01/2022

Conductivity	:	Data not available
Molecular weight	:	34.08 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No, product will not become self-reactive.
Chemical stability	:	Stable under normal conditions of use.
Possibility of hazardous reactions	:	No hazardous reaction is expected when handled and stored according to provisions
Conditions to avoid	:	Heat, open flames, sparks and flammable atmospheres. In certain circumstances product can ignite due to static electricity.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on product testing.
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Information on likely routes of exposure

Inhalation is the primary route of exposure although exposure may occur through skin or eye contact.

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: Not applicable
Acute inhalation toxicity	:	LC 50 (Rat): >100 - <=500 ppmV Exposure time: 4 h Remarks: Highly toxic and may be fatal if inhaled. (Hydrogen Sulfide)
Acute dermal toxicity	:	Remarks: Not applicable

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

Skin corrosion/irritation

Product:

Remarks: Not irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Irritating to eyes. (Hydrogen Sulfide)

Respiratory or skin sensitisation

Product:

Remarks: Not a sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

:
Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

STOT - single exposure

Product:

Remarks: Contains hydrogen sulphide., Inhalation of vapours or mists cause irritation to the respiratory system. (Hydrogen Sulfide), High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

STOT - repeated exposure

Product:

Remarks: Low systemic toxicity on repeated exposure.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: H₂S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary oedema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning. H₂S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H₂S will accumulate in the body tissue after repeated exposure., Rapid release of gases which are liquids under pressure may cause frost burns of exposed tissues (skin, eye) due to evaporative cooling., High gas concentrations will displace available air; unconsciousness and death may occur suddenly from lack of oxygen., Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products. Physical properties indicate that hydrocarbon gases will rapidly volatilise from the aquatic environment and that acute and chronic effects would not be observed in practice.

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

ty) Remarks: LL/EL/IL50 <= 1 mg/l
Very toxic.

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: LL/EL/IL50 <= 1 mg/l
Very toxic.

Toxicity to algae (Acute toxicity) : Remarks: LL/EL/IL50 <= 1 mg/l
Very toxic.

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Oxidises rapidly by photo-chemical reactions in air.
Readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Mobility in soil

Product:

Mobility : Remarks: Because of their extreme volatility, air is the only environmental compartment that hydrocarbon gases will be found.

Other adverse effects

Product:

Additional ecological information : In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : It is the responsibility of the waste generator to determine the

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version
1.0

Revision Date:
04/01/2022

SDS Number:
VRAM00018

Print Date: 04/01/2022
Date of last issue: 04/01/2022

toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Do not dispose into the environment, in drains or in water courses
Given the nature and uses of this product, the need for disposal seldom arises. If necessary, dispose by controlled combustion in purpose-designed equipment. If this is not possible, contact the supplier.

Contaminated packaging : Return part-used or empty cylinders to the supplier. For tanks seek specialist advice from suppliers. Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Do not pollute the soil, water or environment with the waste container.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

UN/ID/NA number : UN 1053
Proper shipping name : Hydrogen sulfide
Class : 2.3
Subsidiary risk : 2.1
Packing group : Not Assigned
Labels : 2.3 (2.1)
Reportable quantity : Hydrogen Sulfide (100 lb)
ERG Code : 117
Marine pollutant : no
Poisonous by inhalation. : Hazard Zone B

International Regulations

IATA-DGR

UN/ID No. : UN 1053 (Not permitted for transport)
Proper shipping name : HYDROGEN SULPHIDE
Class : 2.3
Packing group : Not Assigned

IMDG-Code

UN number : UN 1053
Proper shipping name : HYDROGEN SULPHIDE
Class : 2.3

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hydrogen Sulfide

Version 1.0 Revision Date: 04/01/2022 SDS Number: VRAM00018 Print Date: 04/01/2022
Date of last issue: 04/01/2022

Subsidiary risk : 2.1
Packing group : Not Assigned
Labels : 2.3 (2.1)
Marine pollutant : no

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

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrogen sulfide	7783-06-4	100	100

*: The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
Hydrogen sulfide	7783-06-4	500

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Hydrogen sulfide 7783-06-4 >= 90 - <= 100 %

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Gases under pressure
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Hydrogen sulfide 7783-06-4 >= 90 - <= 100 %

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Hydrogen Sulfide

Version Revision Date: SDS Number: Print Date: 04/01/2022
1.0 04/01/2022 VRAM00018 Date of last issue: 04/01/2022

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Hydrogen sulfide	7783-06-4	100 %
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US State Regulations

Pennsylvania Right To Know

Hydrogen sulfide	7783-06-4
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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

California List of Hazardous Substances

Hydrogen sulfide	7783-06-4
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California List of Acutely Hazardous Chemicals, Toxics and Reactives

Hydrogen sulfide	7783-06-4
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SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

2009/161/EU	:	2009/161/EU
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-2	:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
2009/161/EU / STEL	:	Short term exposure limit
2009/161/EU / TWA	:	Limit Value - eight hours
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
ACGIH / STEL	:	Short-Term Exposure Limit (STEL)
OSHA Z-2 / CEIL	:	Acceptable ceiling concentration
OSHA Z-2 / Peak	:	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
Abbreviations and Acronyms	:	The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut für Normung

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Hydrogen Sulfide

Version	Revision Date:	SDS Number:	Print Date: 04/01/2022
1.0	04/01/2022	VRAM00018	Date of last issue: 04/01/2022

DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HP = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

|| Due to a change in detail in Section 15, this document has been released as a significant change.

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Hydrogen Sulfide

Version	Revision Date:	SDS Number:	Print Date: 04/01/2022
1.0	04/01/2022	VRAM00018	Date of last issue: 04/01/2022

Revision Date : 04/01/2022

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