

HYDROGEN SULFIDE

0165

October 2002

CAS No: 7783-06-4
RTECS No: MX1225000
UN No: 1053
EC No: 016-001-00-4

Sulfur hydride
(cylinder)
H₂S
Molecular mass: 34.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Extremely flammable.	NO open flames, NO sparks, and NO smoking.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with water spray, powder, carbon dioxide.
EXPLOSION	Gas/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep cylinder cool by spraying with water.

EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Headache. Dizziness. Cough. Sore throat. Nausea. Laboured breathing. Unconsciousness. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. No mouth-to-mouth artificial respiration. Refer for medical attention.
Skin	ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.
Eyes	Redness. Pain. Severe deep burns.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Remove all ignition sources. Ventilation. Remove gas with fine water spray. Personal protection: gas-tight chemical protection suit including self-contained breathing apparatus.	F+ Symbol T+ Symbol N Symbol R: 12-26-50 S: (1/2-)9-16-36-38-45-61 UN Hazard Class: 2.3 UN Subsidiary Risks: 2.1

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-20G2TF or 20S1053 NFPA Code: H4; F4; R0	Fireproof. Separated from strong oxidants. Cool. Keep in a well-ventilated room. Install continuous monitoring system with alarm.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS COMPRESSED LIQUEFIED GAS, WITH CHARACTERISTIC ODOUR OF ROTTEN EGGS.

Physical dangers

The gas is heavier than air and may travel along the ground; distant ignition possible. As a result of flow, agitation, etc., electrostatic charges can be generated.

Chemical dangers

Heating may cause violent combustion or explosion. The substance decomposes on burning producing toxic gases (sulfur oxides). Reacts violently with strong oxidants, causing fire and explosion hazard. Attacks many metals and some plastics.

Occupational exposure limits

TLV: 10 ppm as TWA; 15 ppm as STEL; (ACGIH 2004).
MAK: 10 ppm, 14 mg/m³; Peak limitation category: II(2);
Pregnancy risk group: IIc; (DFG 2004).

Routes of exposure

The substance can be absorbed into the body by inhalation.

Inhalation risk

A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

Effects of short-term exposure

The substance is irritating to the eyes and the respiratory tract. The substance may cause effects on the central nervous system. Exposure may result in unconsciousness. Exposure may result in death. Inhalation of gas may cause lung oedema (see Notes). The effects may be delayed. Medical observation is indicated. Rapid evaporation of the liquid may cause frostbite.

PHYSICAL PROPERTIES

Boiling point: -60/C
Melting point: -85/C
Solubility in water, g/100 ml at 20/C: 0.5
Relative vapour density (air = 1): 1.19

Flash point: Flammable Gas
Auto-ignition temperature: 260/C
Explosive limits, vol% in air: 4.3-46

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.
Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.
The substance blocks the sense of smell.
The odour warning when the exposure limit value is exceeded is insufficient.
Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible