Material Safety Data Sheet (MSDS)

Hydrogen Sulfide

Export Version

Version: 2.1

Revised Date: 14 April 2026

1. Identification of the Substance / Mixture and Company

Product name: Hydrogen Sulfide

Other names: Sulfur Hydride

Molecular formula: H_2S

Molecular weight: 34.08

CAS No.: 7783-06-4

Company: Wenzhou Yingyue New Materials Co., Ltd.

Address: Room 2050, 2nd Floor, No.2 Xinshi East Street, Changhong Village, Liushi Town, Yueqing, Wenzhou, Zhejiang, China, 325604

24h Emergency telephone: +86 18868285520

China National Chemical Emergency Hotline: +86 400-810-0652

E-mail: JS@wzyyxcl.com

Recommended use: Manufacture of inorganic sulfides; chemical analysis for metal ion identification.

Restrictions on use: Not established.

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2. Hazards Identification

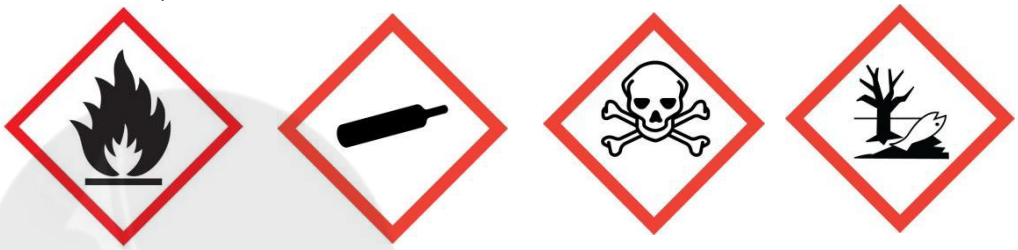
Emergency overview: Extremely flammable gas; compressed gas; may explode if heated; fatal if inhaled; very toxic to aquatic life.

GHS Classification

- Flammable Gas – Category 1
- Compressed Gas
- Acute Toxicity – Inhalation – Category 2
- Hazard to Aquatic Environment – Acute Hazard – Category 1

GHS Pictograms

GHS02 (Flame)、GHS04 (Gas cylinder)、GHS06 (Skull and crossbones)、GHS09 (Environment)



Signal word: Danger

Hazard statements (full text)

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 (full text)

Prevention

P210: Keep away from heat, sparks, open flames, hot surfaces. No smoking.

P260: Do not breathe gas, mist, vapors, spray.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves, protective clothing, eye protection, face protection.

P273: Avoid release to the environment.

Response

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call emergency center or physician.

P370+P376: In case of fire: Stop leak if safe to do so. Use extinguishing media suitable for surrounding fire.

Storage

P403: Store in a well-ventilated place.

P410: Protect from sunlight.

P405: Store locked up.

Disposal

P501: Dispose of contents/container in accordance with local/regional/national/international

regulations.

Physical & chemical hazards: Extremely flammable; forms explosive mixtures with air.

Health hazards: Strong neurotoxin; severe irritation to mucous membranes. High concentrations may cause rapid coma, respiratory arrest, or “lightning death”.

Environmental hazards: Very toxic to aquatic organisms; **marine pollutant**.

3. Composition / Information on Ingredients

Component	Concentration	CAS No.
Hydrogen Sulfide	≥99%	7783-06-4

4. First Aid Measures

Inhalation: Immediately remove victim to fresh air. Keep respiratory tract unobstructed. If breathing is difficult, administer oxygen. If breathing and heartbeat cease, perform CPR (avoid mouth-to-mouth breathing). Seek medical advice immediately.

Skin contact: Remove contaminated clothing immediately. Rinse skin thoroughly with running water. Seek medical advice.

Eye contact: Immediately irrigate eyes with plenty of water or saline for 5–10 minutes. Seek medical advice.

Advice to first aiders: Use appropriate personal protective equipment.

Advice to medical practitioner: Symptomatic treatment.

5. Firefighting Measures

Suitable extinguishing media: Water fog, alcohol-resistant foam, dry chemical.

Hazardous properties: Reacts violently with strong oxidizers (concentrated nitric acid, fuming nitric acid) and may explode. Heavier than air; may accumulate in low areas and flash back. Combustion produces toxic sulfur oxides.

Special protective actions: Shut off gas supply. Do NOT extinguish flames if gas leakage cannot be stopped safely. Firefighters must wear self-contained breathing apparatus (SCBA) and full protective clothing; fight fire from upwind. Cool cylinders with water spray.

6. Accidental Release Measures

Personal precautions: Eliminate all ignition sources. Evacuate personnel to upwind and crosswind safe areas. Wear positive-pressure SCBA, fully enclosed chemical protective suit, and chemical-resistant gloves. Avoid frostbite from liquefied gas.

Environmental precautions: Prevent gas from entering sewers, ventilation systems, confined spaces and water bodies.

Methods for cleanup: Isolate area until gas disperses. Controlled combustion may be performed under professional supervision to eliminate toxic gas.

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7. Handling and Storage

Handling: Keep tightly closed; ensure adequate local exhaust and general ventilation. Use explosion-proof equipment. Avoid contact with oxidizers and alkalis. Ground containers during transfer. No smoking, sparks, or open flames.

Storage: Store in a cool, well-ventilated warehouse for flammable gases. Temperature ≤30°C. Keep containers sealed. Separately store from oxidizers and alkalis. Use explosion-proof lighting and ventilation. Lock storage area.

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8. Exposure Controls / Personal Protection

Exposure limits

- China MAC: 10 mg/m³
- GBZ 2.1-2019: PC-TWA 10 mg/m³; PC-STEL 15 mg/m³
- ACGIH TLV: TWA 1 ppm; STEL 5 ppm
- EU IOELV: 1 ppm (8h TWA)

Monitoring method: Silver nitrate colorimetric method.

Engineering controls: Enclosed operation; local exhaust ventilation; emergency eyewash and safety shower facilities.

Personal protective equipment

- Respiratory: Filter respirator (half-mask) for normal use; SCBA for emergency / rescue.
- Eyes: Chemical safety goggles.
- Skin: Antistatic protective clothing.
- Hands: Chemical-resistant gloves.

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9. Physical and Chemical Properties

- Appearance: Colorless gas with characteristic rotten egg odor
- Relative density (water=1): 1.54
- Vapor density (air=1): 1.19
- Saturation vapor pressure: 2026.5 kPa (25.5°C)
- Melting point: -85.5°C
- Boiling point: -60.3°C
- Flash point: -106°C
- Autoignition temperature: 260°C
- Explosive limits (vol%): 4.3 – 46.0
- Solubility: Soluble in water, ethanol, carbon disulfide, glycerol, gasoline, kerosene
- pH (1% aqueous solution): 4.5

10. Stability and Reactivity

Stability: Stable under normal conditions.

Hazardous reactions: Risk of fire or explosion with strong oxidizers.

Incompatible materials: Strong oxidizers, alkalis.

Hazardous decomposition products: Sulfur oxides.

11. Toxicological Information

- Acute toxicity: LC50 618 mg/m³ (rat, inhalation); LCLo 600 ppm (human, 30 min)
- Skin, eye irritation: No data
- Sensitization, mutagenicity, carcinogenicity, reproductive toxicity: No data
- Repeated exposure: May cause nervous system disorders and respiratory tract damage.

12. Ecological Information

- Ecotoxicity: TLm 0.0071–0.55 mg/L (96h, fathead minnow); 0.0448–0.0478 mg/L (96h, bluegill sunfish)
- Marine Pollutant: **YES**

13. Disposal Considerations

Dispose of the product by incineration. Remove sulfur oxides from flue gas via scrubber.

Empty containers: Return to supplier or dispose in accordance with national and local regulations.

14. Transport Information

- UN Number: **UN1053**
- UN Proper Shipping Name: **HYDROGEN SULPHIDE, COMPRESSED**
- Hazard class: 2.1, 2.3
- Packaging group: Not applicable
- Packing label: Flammable gas, Toxic gas
- Marine pollutant: **YES**
- IMDG Code: Chapter 2.1; EMS Number: F-E, S-I
- IATA DGR: Packing Instruction 613
- ADR: RID/ADR Class 2.1+2.3

Transport precautions: Cylinders must be secured with cap fastened; no mixed transport with oxidizers, alkalis, or foodstuffs; avoid direct sunlight and densely populated areas.

15. Regulatory Information

- China: GBZ 2.1-2019, GB 30000, GB/T 16483; Hazardous Chemicals List; Highly Toxic Substances
- EU: **CLP (EC) No 1272/2008**
- US: **OSHA HCS 2012**
- International: IMDG, IATA, ADR

16. Other Information

Disclaimer: This MSDS is provided for safety reference only. The company shall not be liable for any damage or injury caused by improper use or mishandling.

Authorized Signature: Jiang Shu

Name: J i a n g S h u

Title: G e n e r a l M a n a g e r

Date: 14 April 2026