Safety Data Sheet
Hydrogen Sulfide

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Section 1: Product and Company Identification

Advanced Specialty Gases
135 Catron Dr. Reno, NV 89512
775-356-5500

Product Code: Hydrogen Sulfide

Section 2: Hazards Identification

Danger

Hazard Classification:
Acute Gas Inhale Toxicity (Category 3)
Flammable (Category 1)
Gases Under Pressure

Hazard Statements:
Contains gas under pressure; may explode if heated
Extremely flammable gas
Toxic if inhaled
Toxic to aquatic life

Precautionary Statements
Prevention:
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Use only outdoors or in a well-ventilated area.
Avoid breathing dust/fume/gas/mist/ vapors/spray.
[In case of inadequate ventilation] wear respiratory protection.

Response:
Eliminate all ignition sources if safe to do so.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Call a poison center or doctor.

Storage:
Store in a well-ventilated place. Keep container tightly closed.
Protect from sunlight.
Store locked up.

Disposal:

Dispose of contents and/or container in accordance with applicable regulations.

Section 3: Composition/Information on Ingredients

CAS #
7783-06-4

Chemical Substance	Chemical Family	Trade Names
HYDROGEN SULFIDE	inorganic, gas	HYDROGEN SULFIDE (H2S); DIHYDROGEN MONOSULFIDE; DIHYDROGEN SULFIDE; HYDROSULFURIC ACID; SULFUR DIHYDRIDE; SULFURETED HYDROGEN; SULFUR HYDRIDE; STINK DAMP; SEWER GAS; RCRA U135; UN 1053; H2S

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.	Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Let burn unless leak can be stopped immediately. Large fires: Use regular foam or flood with fine water spray.	Sulfur oxides	▪ Any self-contained breathing apparatus with a full facepiece. ▪ Protective material types: butyl rubber, polyvinyl chloride (PVC), neoprene

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet. For tank, rail car or tank truck: 800 meters (1/2 mile). Do not touch spilled material.	Avoid heat, flames, sparks and other sources of ignition.	Stop leak if possible without personal risk. Remove sources of ignition. Reduce vapors with water spray. Do not get water directly on material.

Methods for Cleanup	Other Information
Collect runoff for disposal as potential hazardous waste. Dike for later disposal. Absorb with sand or other non-combustible material. Add an alkaline material (lime, crushed limestone, sodium bicarbonate, or soda ash).	Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

Section 7: Handling and Storage

Handling	Storage
Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Store in a cool, dry place. Store in a well-ventilated area. Avoid contact with light. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30). Keep separated from incompatible substances.	Subject to handling regulations: U.S. OSHA 29 CFR 1910.119.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
HYDROGEN SULFIDE: 20 ppm OSHA ceiling 50 ppm OSHA peak 10 minute(s) (once if no other measurable exposure occurs) 10 ppm (14 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 15 ppm (21 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 10 ppm ACGIH TWA 15 ppm ACGIH STEL 10 ppm (15 mg/m3) NIOSH recommended ceiling 10 minute(s) TLV-TWA: 1ppm Upper respiratory irritation (ACGIH)

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	Wear appropriate chemical resistant clothing.	Any self-contained breathing apparatus with a full facepiece.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Colorless	Colorless	N/A	Gas	Rotten egg odor	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Flammable	Not available	Not available	500 F (260 C)	44-46%	4.0-4.3%

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-78 to -77 F (-61 to -60.3 C)	-123 F (-86 C)	15200 mmHg @ 25 C	1.2 (Air=1)	1.192	2.58-2.9% @ 20 C	4.5-<7 (saturated solution)	0.13 ppm	Not applicable	0.0128 cP @ 25 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
34.08	H2-S	1.539 g/L @ 0 C	Not available	Not available	Not applicable	Soluble: Carbon disulfide, alcohol, ether, glycerol, gasolines, kerosene, crude oil, alkali solutions

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Combustible materials, metals, oxidizing materials, halogens, metal oxides, metal salts, bases, rust, oxidants, oxygen, copper powder, acetaldehyde, silver fulminate

Hazardous Decomposition Products	Possibility of Hazardous Reactions

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Oxides of sulfur	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
444 ppm inhalation-rat LC50	Irritation 0.000125 ppm/5 hour(s) eyes-human	Irritation, lack of sense of smell, sensitivity to light, nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, disorientation, tremors, visual disturbances, suffocation, lung congestion, internal bleeding, heart damage, nerve damage, brain damage, coma, death

Eye Irritation	Skin Irritation	Sensitization
Irritation, sensitivity to light, visual disturbances	Irritation liquid: frostbite	Harmful if inhaled, respiratory tract irritation, skin irritation, eye irritation, blood damage

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not available	Not available	Available.	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Acute LC50 7 ug/L Fresh water Fish - Fathead minnow - Pimephales promelas - FRY 96 hours; 14.9 ug/L 96 hour(s) LC50 (Mortality) Fathead minnow (Pimeph **Invertibrate toxicity: 9730 ug/L 1.5 hour(s) (Mortality) Mediterranean mussel (Mytilus galloprovincialis)** **Algal toxicity: Not available** **Phyto toxicity: Not available** **Other toxicity: Not available**	Highly toxic to aquatic life.	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U135.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Hydrogen sulfide	UN1053	2.3	Not applicable	2.3; 2.1	Forbidden	Forbidden	Toxic-Inhalation Hazard Zone B

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
HYDROGEN SULFIDE; or HYDROGEN SULPHIDE	UN1053	2.3; 2.1	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
100 LBS RQ	500 LBS TPQ	100 LBS RQ

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	Yes	No	Yes

SARA 372.65

HYDROGEN SULFIDE: Administrative stay issued Aug. 22, 1994

OSHA Process Safety

1500 LBS TQ

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A, B1, D1A, D2B.

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Listed on inventory.

Section 16: Other Information

NFPA Rating
HEALTH=4 FIRE=4 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard