



MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

PRODUCT NAME: HYDROGEN SULFIDE (1 PPM – 5000 PPM) IN NITROGEN

MSDS NO: 98

Version: 3

Date: March, 2012

1. Chemical Product and Company Identification

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PRODUCT NAME: HYDROGEN SULFIDE (1 PPM – 5000 PPM) IN NITROGEN
CHEMICAL NAME: Hydrogen Sulfide in nitrogen
COMMON NAMES/ SYNONYMS: None
TDG (Canada) CLASSIFICATION: 2.2
WHIMIS CLASSIFICATION: A

2. COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENT	%VOLUME	PEL-OSHA	TLV-ACGIH	LD ₅₀ or LC ₅₀ Route/Species
Hydrogen Sulfide FORMULA: H ₂ S	0.0001-0.50	10 ppm TWA	10 ppm TLV 15 ppm STEL	LC ₅₀ 444 ppm/1H (Rat)
Nitrogen FORMULA: N ₂	99.975 to 99.999	Simple Asphyxiate	Simple Asphyxiate	N/A

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This product is a colorless gas, which has a rotten-egg odor. The odor cannot be relied on as an adequate warning to the presence of this product, because olfactory fatigue occurs after over-exposure to Hydrogen Sulfide. Over-exposure to this gas can cause skin or eye irritation, nausea, dizziness, headaches, collapse, unconsciousness, coma, and death. Additionally, releases of this product may produce oxygen-deficient atmospheres and may cause asphyxiation.

ROUTE OF ENTRY:

Skin Contact Yes	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion No
HEALTH EFFECTS:				
Exposure Limits Yes	Irritant Yes	Sensitization No	Reproductive Hazard Yes	Mutagen Yes

Carcinogenicity: --NTP: No IARC: No OSHA: No

EYE EFFECTS:

Contact may cause eye irritation with associated redness, swelling, and tears.



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SKIN EFFECTS:

Contact may cause skin irritation.

INGESTION EFFECTS:

Ingestion unlikely. Gas at room temperature.

INHALATION EFFECTS:

Over-exposure to Hydrogen Sulfide can cause dizziness, headache, and nausea. Over-exposure to this gas could result in respiratory arrest, coma, or unconsciousness. Continuous inhalation of low concentrations of Hydrogen Sulfide may cause olfactory fatigue, so that the odor is no longer an effective warning to the presence of this gas.

At 0.3 ppm to 30 ppm the odor is unpleasant. At 50 ppm eye irritation occurs and dryness of the nose and throat. At 100- 150 ppm a temporary loss of smell occurs. Exposures of 200- 250 ppm for more than 4 hours can cause death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with impaired pulmonary function may be at increased risk from exposure.

NFPA HAZARD CODES

Health: 3
Flammability: 0
Reactivity: 0

HMIS HAZARD CODES

Health: 3
Flammability: 0
Reactivity: 0

RATING SYSTEM

0= No Hazard
1= Slight Hazard
2= Moderate Hazard
3= Serious Hazard
4= Severe Hazard

4. FIRST AID MEASURES

EYES:

PERSONS WITH POTENTIAL EXPOSURE SHOULD NOT WEAR CONTACT LENSES. Flush contaminated eyes with copious quantities of water. Part eyelids to assure complete flushing. Continue for a minimum of 15 minutes. Seek immediate medical attention.

SKIN:

Remove contaminated clothing as rapidly as possible. Flush affected area with copious quantities of water. Seek immediate medical attention.

INGESTION:

Not required

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH THE SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. If breathing has stopped administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

5. FIRE-FIGHTING MEASURES

These containers hold gas under pressure, with no liquid phase. If involved in a major fire, they should be sprayed with water to avoid pressure increases, otherwise pressures will rise and ultimately they may distort or burst to release the contents. The gases will not add significantly to the fire, but containers or fragments may be projected considerable distances - thereby hampering fire fighting efforts.



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6. ACCIDENTAL RELEASE MEASURES

In terms of weight, these containers hold very little contents, such that any accidental release by puncturing etc. will be of no practical concern.

7. HANDLING AND STORAGE

Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Use only in well-ventilated areas. Do not heat cylinder by any means to increase rate of product from the cylinder. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Use adequate ventilation for extended use of gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

PARAMETER:	VALUE:
Physical state	: Gas
Evaporation point	: N/A
pH	: N/A
Odor and appearance	: Colorless gas with a rotten egg odor

10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 15 months.

11. TOXICOLOGICAL INFORMATION

This gas mixture contains components that may cause embryotoxic effects in humans; however due to the small amount of gas in this cylinder, embryotoxic effects are not expected to occur.

12. ECOLOGICAL INFORMATION

No ecological damage caused by this product.

13. DISPOSAL INFORMATION

Do not discharge into any place where its accumulation could be dangerous. Used containers are acceptable for disposal in the normal waste stream as long as the cylinder is empty and valve removed or cylinder wall is punctured; but GASCO encourages the consumer to return cylinders.



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14. TRANSPORT INFORMATION

	<u>United States DOT</u>	<u>Canada TDG</u>
PROPER SHIPPING NAME:	Compressed Gas N.O.S. (Hydrogen Sulfide in Nitrogen)	Compressed Gas N.O.S. (Hydrogen Sulfide in Nitrogen)
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN1956	UN1956
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

15. REGULATORY INFORMATION

Hydrogen Sulfide is listed under the accident prevention provisions of section 112(r) of the Clean Air Act (CAA) with a threshold quantity (TQ) of 10,000 pounds.

16. OTHER INFORMATION

This MSDS has been prepared in accordance with the Chemicals (Hazard Information and Packaging for Supply (Amendment) Regulation 1996. The information is based on the best knowledge of GASCO, and its advisors and is given in good faith, but we cannot guarantee its accuracy, reliability or completeness and therefore disclaim any liability for loss or damage arising out of use of this data. Since conditions of use are outside the control of the Company and its advisors we disclaim any liability for loss or damage when the product is used for other purposes than it is intended.

MSDS/S010/98/ March, 2012