

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet 50248

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 03/09/2015 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen
Replaces ISC MSDS No. : 1810-0859, 1810-2245, 1810-2304, 1810-2970, 1810-2988, 1810-4216B, 1810-4984, 1810-6633, 1810-7458, 1810-8274, 1810-9078, 1810-9090, 1810-9096, 1810-9100, 1810-9132

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Test gas/Calibration gas.

1.3. Details of the supplier of the safety data sheet

U.S. Supplier: Industrial Scientific Corporation
1 Life Way
Pittsburgh, PA 15205-7500
Phone (412) 788-4353
TOLL-FREE 800-DETECTS
Fax (412) 788-8353

MANUFACTURER CALGAZ

821 Chesapeake Drive
Cambridge, MD 21613

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300
Internationally: 1-703-827-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Compressed gas H280
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US)



GHS04

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H280 - Contains gas under pressure; may explode if heated
Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P313 - Get medical advice/attention
P403 - Store in a well-ventilated place
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution
CGA-PG21 - Open valve slowly

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/information on Ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Nitrogen	(CAS No) 7727-37-9	99.95 - 99.9999	Compressed gas, H280
Hydrogen sulfide	(CAS No) 7783-06-4	0.0001 - 0.05	Flam. Gas 1, H220 Liquefied gas, H280 Acute Tox. 2 (Inhalation gas), H330 STOT SE 3, H335 Aquatic Acute 1, H400

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact : Adverse effects not expected from this product.
First-aid measures after eye contact : Adverse effects not expected from this product.
First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.
4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. May cause respiratory irritation.
Symptoms/injuries after skin contact : Adverse effects not expected from this product.
Symptoms/injuries after eye contact : Adverse effects not expected from this product.
Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
Symptoms/injuries upon intravenous administration : Not known.
Chronic symptoms : Adverse effects not expected from this product.

4.3. Indication of any immediate medical attention and special treatment needed

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen. Obtain medical attention if breathing difficulty persists.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media : Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : The product is not flammable.
Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity : None known.

5.3. Advice for firefighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.
Specific methods : Exposure to fire may cause containers to rupture/explode. Continue water spray from protected position until container stays cool. Move containers away from the fire area if this can be done without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate ventilation.
6.1.1. For non-emergency personnel
Protective equipment : Wear protective equipment consistent with the site emergency plan.

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Emergency procedures	Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.
6.1.2. For emergency responders	
Protective equipment	Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures	Evacuate and limit access. Ventilate area.
6.2. Environmental precautions	
Try to stop release if safe to do so	
6.3. Methods and material for containment and cleaning up	
For containment	Try to stop release if safe to do so.
Methods for cleaning up	Dispose of this material and its container in accordance with local regulations.
6.4. Reference to other sections	
See also Sections 8 and 13	

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	Pressurized container. Do not pierce or burn, even after use. Use equipment rated for cylinder pressure.
Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
Safe handling of the gas receptacle	Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.
Safe use of the product	The substance must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Hygiene measures	Do not eat, drink or smoke when using this product. Observe very strict hygiene - avoid contact.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	Comply with applicable regulations.
Storage conditions	Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area.
Incompatible products	None known.
Incompatible materials	None known. Nitric acid.
Storage area	Store away from heat. Store in a well-ventilated place.

7.3. Specific end use(s)

See Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen		
ACGIH	Not applicable	
OSHA	Not applicable	
Nitrogen (7727-37-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
Hydrogen sulfide (7783-06-4)		
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	ACGIH STEL (ppm)	5 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

8.2. Exposure controls	
Appropriate engineering controls	Alarm detectors should be used when toxic gases may be released. Oxygen detectors should be used when asphyxiating gases may be released. Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Consider work permit system e.g. for maintenance activities. Ensure exposure is below occupational exposure limits.
Hand protection	Wear working gloves when handling gas containers. 29 CFR 1910.138. Hand Protection.
Eye protection	Wear safety glasses with side shields. 29 CFR 1910.133. Eye and Face Protection.
Skin and body protection	Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.
Respiratory protection	None necessary during normal and routine operations. See Sections 5 & 6.
Thermal hazard protection	None necessary during normal and routine operations.
Environmental exposure controls	Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
Other information	Wear safety shoes while handling containers. 29 CFR 1910.136. Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Gas
Appearance	Clear, colorless gas.
Color	Colorless
Odor	sulfide-like Rotten eggs
Odor threshold	No data available
pH	Not applicable for gas-mixtures.
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Relative evaporation rate (butyl acetate=1)	No data available
Relative evaporation rate (ether=1)	Not applicable for gas-mixtures.
Flammability (solid, gas)	See Sect. 2.1 & 2.2
Explosion limits	Not applicable - not flammable
Explosive properties	Not applicable - not flammable
Oxidizing properties	None
Vapor pressure	Not applicable.
Relative density	No data available
Relative vapor density at 20 °C	No data available
Molecular mass	Not applicable for gas-mixtures.
Relative gas density	Lighter or similar to air.
Solubility	Water. Solubility in water of component(s) of the mixture: • : 20 mg/l • : 3980 mg/l
Log Pow	Not applicable for gas-mixtures.
Log Kow	Not applicable for gas-mixtures.
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Viscosity, kinematic	Not applicable.
Viscosity, dynamic	Not applicable.

9.2. Other information

Additional information: None

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable under normal conditions.

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.3. Possibility of hazardous reactions

None known. Hydrogen sulfide can form explosive compounds with nitric acid.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Storage near nitric acid.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Nitrogen (7727-37-9)

LC50 inhalation rat (ppm) : 820000 ppm/4h

Hydrogen sulfide (7783-06-4)

LC50 inhalation rat (mg/l) : 0.99 mg/l (Exposure time: 1 h)

LC50 inhalation rat (ppm) : 356 ppm/4h

Skin corrosion/irritation : Not classified

pH : Not applicable for gas-mixtures

Serious eye damage/irritation : Not classified

pH : Not applicable for gas-mixtures

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. May cause respiratory irritation.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

SECTION 12: Ecological Information

12.1. Toxicity

Ecology - general : Classification criteria are not met.

Hydrogen sulfide (7783-06-4)

LC50 fish 1 : 0.0448 mg/l (Exposure time: 96 h - Species: *Lepomis macrochirus* (flow-through))

EC50 Daphnia 1 : 0.022 mg/l (Exposure time: 96 h - Species: *Gammarus pseudolimnaeus*)

LC50 fish 2 : 0.016 mg/l (Exposure time: 96 h - Species: *Pimephales promelas* (flow-through))

12.2. Persistence and degradability

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Persistence and degradability : No data available.

Nitrogen (7727-37-9)

Persistence and degradability : No ecological damage caused by this product.

04/27/2015

EN (English US)

SDS ID: 50248 / P/N 3802

5/1

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hydrogen sulfide (7783-06-4)

Persistence and degradability : Not applicable for inorganic gases.

12.3. Bioaccumulative potential

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Log Pow : Not applicable for gas-mixtures.

Log Kow : Not applicable for gas-mixtures.

Bioaccumulative potential : No data available.

Nitrogen (7727-37-9)

Log Pow : Not applicable for inorganic gases.

Bioaccumulative potential : No ecological damage caused by this product.

Hydrogen sulfide (7783-06-4)

BCF fish 1 : (no bioaccumulation expected)

Log Pow : Not applicable for inorganic gases.

Bioaccumulative potential : No data available.

12.4. Mobility in soil

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Mobility in soil : No data available.

Nitrogen (7727-37-9)

Ecology - soil : No ecological damage caused by this product.

Hydrogen sulfide (7783-06-4)

Ecology - soil : Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on ozone layer : None.

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.

Waste disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1956 Compressed gas, n.o.s.

UN-No (DOT) : UN1956

Proper Shipping Name (DOT) : Compressed gas, n.o.s.

Hazard labels (DOT) : 2.2 - Non-flammable gas



DOT Packaging Non Bulk (49 CFR 173.3xxx) : 302, 306

DOT Packaging Bulk (49 CFR 173.3xxx) : 314, 315

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Packaging Exceptions (49 CFR 173.3xx) : 306, 307

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 75 kg

04/27/2015

EN (English US)

SDS ID: 50248 / P/N 3802

9/1

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg
 DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

Other information : No supplementary information available.
 Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

ADR

Transport document description : UN 1956 COMPRESSED GAS, N O S, 2.2
 Class (ADR) : 2 - Gases
 Hazard labels (ADR) : 2.2 - Non-flammable compressed gas



Transport by sea

UN-No (IMDG) : 1956
 Proper Shipping Name (IMDG) : COMPRESSED GAS, N O S
 Class (IMDG) : 2.2 - Non-flammable, non-toxic gases

Air transport

UN-No (IATA) : 1956
 Proper Shipping Name (IATA) : COMPRESSED GAS, N O S
 Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

Nitrogen (7727-37-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Hydrogen sulfide (7783-06-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on the United States SARA Section 302	
Listed on United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	500
SARA Section 313 - Emission Reporting	1.0 %

15.2. International regulations

CANADA

Nitrogen (7727-37-9)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas
Hydrogen sulfide (7783-06-4)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

04/27/2015

EN (English US)

SDS ID: 50248 / P/N 3602

7/1

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Nitrogen (7727-37-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Hydrogen sulfide (7783-06-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]
 Not classified

Classification according to Directive 67/548/EEC [DSD] or 1989/45/EC [DPD]
 No additional information available

National regulations

Nitrogen (7727-37-9)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Hydrogen sulfide (7783-06-4)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

Nitrogen (7727-37-9)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
Hydrogen sulfide (7783-06-4)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.
 Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases

Acute Tox 2 (Inhalation gas)	Acute toxicity (inhalation gas) Category 2
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases Category 1
Liquefied gas	Gases under pressure Liquefied gas
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H220	Extremely flammable gas
H260	Contains gas under pressure, may explode if heated
H330	Fatal if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life

04/27/2015

EN (English US)

SDS ID: 50248 / P/N 3602

8/1

Hydrogen Sulfide (0.0001% - 0.05 %) in Nitrogen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of Corgas's knowledge, the information contained herein is reliable and accurate as of this date, however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

