

Safety Data Sheet 50256

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

Date of issue: 03/24/2015

15 Version: 1.0

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

	stance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Mixture
Product name	: Hydrogen Sulfide (0.0001% - 0.05%), Oxygen (19.5 - 23.5%) in balance Nitrogen
1.2. Relevant identified uses of the subst	tance or mixture and uses advised against
Use of the substance/mixture	: Test gas/Calibration gas.
1.3. Details of the supplier of the safety d	data sheet
Calgaz, division of Air Liquide 821 Chesapeake Drive Cambridge, 21613 - USA T 1-410-228-6400 - F 1-410-228-4251 info@Calgaz.com - www.Calgaz.com	
1.4. Emergency telephone number	
Emergency number	: CHEMTREC: 1-800-424-9300 Internationally: 1-703-527-3887
SECTION 2: Hazards identification	
2.1. Classification of the substance or mi	ixture
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 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

SECTION 3: Composition/information on ingredients			
3.1.	Substance		
Not ap	plicable		
3.2.	Mixture		

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Name	Product identifier	%	Classification (GHS-US)
Nitrogen	(CAS No) 7727-37-9	76.45 - 80.4999	Compressed gas, H280
Oxygen	(CAS No) 7782-44-7	19.5 - 23.5	Ox. Gas 1, H270
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 general	: Adverse effects not expected from this product. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Adverse effects not expected from this product. 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 effe	ects, both acute and delayed
Symptoms/injuries after inhalation	: Adverse effects not expected from this product.
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 medic	al attention and special treatment needed
If you feel unwell, seek medical advice. If breatl	
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 to extinguish.
5 5	
5.2. Special hazards arising from the se	
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 mea	asures
6.1. Personal precautions, protective e	quipment and emergency procedures
General measures	: Ensure adequate ventilation.

6.1.1. For non-emergency personnel

: Wear protective equipment consistent with the site emergency plan.

Protective equipment

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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	
Protecti	ve equipment	: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emerge	ency procedures	: Evacuate and limit access. Ventilate area.
6.2.	Environmental precautions	
Try to s	top release if safe to do so.	
6.3.	Methods and material for containm	ent and cleaning up
For con	tainment	: Try to stop release if safe to do so.
Method	s for cleaning up	: Dispose of this material and its container in accordance with local regulations.
6.4.	Reference to other sections	
See als	o Sections 8 and 13.	
SECT	ION 7: Handling and storage	
7.1.	Precautions for safe handling	
Additior	nal hazards when processed	: Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure.
Precaut	tions 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 ha	ndling 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 us	e 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 regularily) 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	e measures	: Do not eat, drink or smoke when using this product. Observe very strict hygiene - avoid contact.
7.2.	Conditions for safe storage, includ	ng any incompatibilities
Technic	al measures	: None known.
Storage	e 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.
Incomp	atible products	: None known.
Incomp	atible materials	: Flammable materials. Nitric acid.
Storage	e 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 parar	neters			
Hydrogen Sulfide (0.0	Hydrogen Sulfide (0.0001% - 0.05%), Oxygen (19.5 - 23.5%) in balance Nitrogen			
ACGIH	Not applicable	Not applicable		
OSHA	Not applicable	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		
Oxygen (7782-44-7)				
ACGIH	Not applicable	Not applicable		
OSHA Not applicable				

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Nitrogen (7727-37-9)		
ACGIH	Not applicable	
OSHA	Not applicable	

 Alarm detectors should be used when toxic 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.
: Wear working gloves when handling gas containers. 29 CFR 1910.138: Hand Protection.
: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
: Wear suitable protective clothing, e.g lab coats, coveralls or flame resistant clothing.
: None necessary during normal and routine operations. See Sections 5 & 6.
: None necessary during normal and routine operations.
: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
: 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.		
Molecular mass	: Not applicable for gas-mixtures.		
Color	: Colourless.;Colorless		
Odor	: Rotten eggs.;Sulfide-like		
Odor threshold	: No data available		
рН	: Not applicable for gas-mixtures.		
Relative evaporation rate (butyl acetate=1)	: No data available		
Relative evaporation rate (ether=1)	: 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		
Auto-ignition temperature	: No data available		
Decomposition temperature	: No data available		
Flammability (solid, gas)	: See Sect. 2.1 & 2.2		
Vapor pressure	: Not applicable.		
Relative vapor density at 20 °C	: No data available		
Relative density	: No data available		
Relative gas density	: Lighter or similar to air.		
Solubility	 Water: Solubility in water of component(s) of the mixture : •: 3980 mg/l •: 39 mg/l •: 20 mg/l 		
Log Pow	: Not applicable for gas-mixtures.		
Log Kow	: Not applicable for gas-mixtures.		
Viscosity, kinematic	: Not applicable.		
Viscosity, dynamic	: Not applicable.		
Explosive properties	: Not applicable - not flammable.		
Oxidizing properties	: Not combustible but enhances combustion of other substances. Supports combustion.		
Explosive limits	: Not applicable - not flammable		
9.2. Other information			
Additional information	: None.		

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SECTION 10: Stability and reactivity
10.1. Reactivity
None known.
10.2. Chemical stability
Stable under normal conditions.
10.3. Possibility of hazardous reactions
Can form explosive mixtures with flammable materials. Hydrogen sulfide can form explosive compounds with nitric acid.
10.4. Conditions to avoid
Storage near nitric acid. See section 7. None under recommended storage and handling conditions (see section 7).
10.5. Incompatible materials
Flammable materials. Nitric acid.
10.6. Hazardous decomposition products
Under normal conditions of storage and use hazardous decomposition products should not be produced.
SECTION 11: Toxicological information
44.4 Information on toxical action offers

11.1. Information on toxicological effects

: Not classified Acute toxicity 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 ATE US (gases) 100.000 ppmV/4h Oxygen (7782-44-7) LC50 inhalation rat (ppm) 800000 ppm/4h Nitrogen (7727-37-9) 820000 ppm/4h LC50 inhalation rat (ppm) 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 : Not classified exposure) : Not classified Aspiration hazard Symptoms/injuries after inhalation : Adverse effects not expected from this product. 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 : Not known. administration Chronic symptoms : Adverse effects not expected from this product.

SECTION 12: Ecological information 12.1. Toxicity

Ecology - general	ology - gen	eral
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: No ecological damage caused by this product.

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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])
2.2. Persistence and degradability	
	a (40 F 22 F%) in balance Nitrogen
Hydrogen Sulfide (0.0001% - 0.05%), Oxyger Persistence and degradability	No data available.
• ·	
Hydrogen sulfide (7783-06-4)	Net emplicable for increanie gases
Persistence and degradability	Not applicable for inorganic gases.
Oxygen (7782-44-7)	
Persistence and degradability	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Persistence and degradability	No ecological damage caused by this product.
2.3. Bioaccumulative potential	
Hydrogen Sulfide (0.0001% - 0.05%), Oxyger	n (19.5 - 23.5%) in balance Nitrogen
Log Pow	Not applicable for gas-mixtures.
Log Kow	Not applicable for gas-mixtures.
Bioaccumulative potential	No data available.
Hydrogen sulfide (7783-06-4)	
BCF fish 1	(no bioaccumulation expected)
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No data available.
Oxygen (7782-44-7)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.
2.4. Mobility in soil	
Hydrogen Sulfide (0.0001% - 0.05%), Oxyger	n (19.5 - 23.5%) in balance Nitrogen
Mobility in soil	No data available.
Hydrogen sulfide (7783-06-4)	•
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Oxygen (7782-44-7)	
Ecology - soil	No ecological damage caused by this product.
••	
Nitrogen (7727-37-9) Ecology - soil	No ecological damage caused by this product.
LAMAN - SUI	ino ecological dallage caused by this product.
2.5. Other adverse effects	
	: None.

SECTION 13: Disposal consideration	ns		
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. 		; or
Waste disposal recommendations	: Refer to the CGA Pamphlet P-63 "Dis guidance on suitable disposal method	sposal of Gases" available at www.cganet.com for n ds.	nore
Ecology - waste materials	: Avoid release to the environment.		
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SECTION 14: Transport information	
In accordance with DOT	
Transport document description	: UN1956 Compressed gas, n.o.s. (Oxygen, Nitrogen)
UN-No.(DOT)	: UN1956
Proper Shipping Name (DOT)	: Compressed gas, n.o.s.
Hazard labels (DOT)	: 2.2 - Non-flammable gas
	2
DOT Symbols	: G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx)	: 306;307
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 302;305
DOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	
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

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SECTION 15: Regulatory informatio	n	
5.1. US Federal regulations		
Hydrogen sulfide (7783-06-4)		
Listed on the United States TSCA (Toxic Subs 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 %	
Oxygen (7782-44-7)		
Listed on the United States TSCA (Toxic Subs	stances Control Act) inventory	
Nitrogen (7727-37-9)		
Listed on the United States TSCA (Toxic Subs	tances Control Act) inventory	

15.2. International regulations

CANADA

Hydrogen sulfide (7783-06-4)			
Listed on the Canadian DSL (Domestic Sustances 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		
Oxygen (7782-44-7)			
Listed on the Canadian DSL (Domestic S	Sustances List)		
WHMIS Classification	Class A - Compressed Gas Class C - Oxidizing Material		
Nitrogen (7727-37-9)			
Listed on the Canadian DSL (Domestic S	Sustances List)		
WHMIS Classification	Class A - Compressed Gas		
EU-Regulations			
Hydrogen sulfide (7783-06-4)			
Listed on the EEC inventory EINECS (Eu	uropean Inventory of Existing Commercial Chemical Substances)		
Oxygen (7782-44-7)			
Listed on the EEC inventory EINECS (Eu	uropean Inventory of Existing Commercial Chemical Substances)		
Nitrogen (7727-37-9)			
• •	ropean Inventory of Existing Commercial Chemical Substances)		
Classification according to Regulation Not classified	EC) No. 1272/2008 [CLP]		
Classification according to Directive 67	/548/EEC [DSD] or 1999/45/EC [DPD]		
15.2.2. National regulations			
Hydrogen sulfide (7783-06-4)			
Listed on the AICS (Australian Inventory Listed on IECSC (Inventory of Existing C Listed on the Japanese ENCS (Existing Listed on the Korean ECL (Existing Cher Listed on NZIOC (New Zealand Inventory Listed on PICCS (Philippines Inventory of Listed on the Canadian IDL (Ingredient D	hemical Substances Produced or Imported in China) & New Chemical Substances) inventory nicals List) r of Chemicals) f Chemicals and Chemical Substances)		
Oxygen (7782-44-7)			
Listed on the AICS (Australian Inventory Listed on IECSC (Inventory of Existing C Listed on the Korean ECL (Existing Cher Listed on NZIoC (New Zealand Inventory Listed on PICCS (Philippines Inventory of	hemical Substances Produced or Imported in China) nicals List) ⁄ of Chemicals)		
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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)

15.3. US State regulations

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

Oxygen (7782-44-7)

- 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

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

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
Ox. Gas 1	Oxidizing gases Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H220	Extremely flammable gas
H270	May cause or intensify fire; oxidizer
H280	Contains gas under pressure; may explode if heated
H330	Fatal if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life

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 Calgaz's knowledge, the information contained herein is reliable and accurate as of this date; however, accruacy, 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.