



Safety Data Sheet

60% HELIUM/40% HYDROGEN

Gas and Supply

125 Thruway Park, Broussard, Louisiana, 70518

Phone :

Emergency Phone : 800-424-9300

www.gasandsupply.com

Section 1: Product and Company Identification

Gas and Supply

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Part Number: 60% HELIUM/40% HYDROGEN

Synonyms:

Recommended Use: Synthetic/Analytical Chemistry

Usage Restrictions:

Section 2: Hazards Identification



Hazard Classification:

Flammable (Category 1), H220

Gases Under Pressure, H280

Simple Asphyxiant, OSHA-H01

Hazard Statements:

H220: EXTREMELY FLAMMABLE GAS.

H280: CONTAINS GAS UNDER PRESSURE; MAY EXPLODE WHEN HEATED.

CGA-HG04: MAY FORM EXPLOSIVE MIXTURES WITH AIR.

CGA-HG08: BURNS WITH INVISIBLE FLAME.

OSHA-H01: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary Statements

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P271+P403: Use and store only outdoors or in a well-ventilated place.

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: In case of leakage, eliminate all ignition sources.

CGA-PG02: Protect from sunlight when ambient temperature exceeds 52C (125F).

CGA-PG05: Use a back flow preventive device in the piping.

CGA-PG06: Close valve after each use and when empty.

CGA-PG10+CGA-PG20: Use only with equipment of compatible materials of construction and rated for cylinder pressure.

CGA-PG12: Do not open valve until connected to equipment prepared for use.

CGA-PG27: Read and follow the Safety Data Sheet (SDS) before use.

Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Helium	7440-59-7	60%
Hydrogen	1333-74-0	40%

	Trade Names
Helium	He, Helium, Atomic helium, Helium-4, p-Helium, O-Helium
Hydrogen	H Hydrogen Molecular hydrogen Dihydrogen Hydrogen atom Atomic hydrogen

Section 4: First Aid Measures

IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media: |
Use suitable extinguishing material for surrounding fire.

Protection of Firefighters: |
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Products of Combustion |
Miscellaneous decomposition products

Section 6: Accidental Release Measures

Personal Precautions: |
Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

Environmental Precautions: |
Keep away from drains, surface and ground water. Avoid heat, flames, sparks and other sources of ignition.

Methods for Containment and Cleanup: |
Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition. If necessary, cover drains. Absorb large spills, dispose in appropriate containers.

Section 7: Handling and Storage

Handling: |
See precautions in Section 2. Only trained personnel should handle this product. Always use approved personal protective equipment.

Storage:

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated area. Keep separated from incompatible substances.

Incompatible Materials

Metals, Oxidizing Agents, Metal Oxides, Combustible Materials, Halogens, Metallic Salts, Halo Carbons, Nitrogen Trifluoride, Oxygen Difluoride, Magnesium, Calcium

Conditions to avoid

Avoid heat, flames, sparks and other sources of ignition.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines	Threshold Limit Value -TLV (ppm)
Helium	Not available
Hydrogen	Not available

Engineering Controls

No specific controls are needed.

Eye Protection

Wear splash resistant safety goggles.

Skin Protection

Wear chemical protective clothing, including gloves.

Respiratory Protection

Use self-contained breathing apparatus.

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 / Physical Form	Appearance / Color	Odor	Flash Point	Flammability	Partition Coefficient
Helium	Gas	Colorless	Odorless	Nonflammable.	Nonflammable.	0
Hydrogen	Gas	Colorless	Odorless	Flammable gas (burns at all ambient temperatures)	Flammable.	0

	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits	Boiling Point	Freezing Point	Vapor Pressure
Helium	Nonflammable.	Not available	Not available	-452 F (-269 C)	-458 F (-272 C) @ 26 atm	Not available
Hydrogen	752 F (400 C)	75	4	-423 F (-253 C)	-434 F (-259 C)	Not available

	Vapor Density	Specific Gravity	Water Solubility	pH	Evaporation Rate	Viscosity
Helium	0.138	Not applicable	0.94% @ 0 C	0	Not applicable	0.02012 cP @ 26.8 C
Hydrogen	0.07	Not applicable	1.82% @ 20 C	0	Not applicable	0.008957 cP @ 26.8 C

	Molecular Weight	Molecular Formula	Density	Volatility	Solvent Solubility
Helium	4.002602	He	Not available	Not applicable	Insoluble : Not Available.
Hydrogen	2.016	H2	Not available	Not applicable	Soluble : Not Available.

Section 10: Stability and Reactivity

	Stability	Possibility of Hazardous Reactions
Helium	Stable at normal temperature and pressure	Will not polymerize.
Hydrogen	Stable at normal temperature and pressure	Will not polymerize.

Conditions to avoid

Avoid heat, flames, sparks and other sources of ignition.

Incompatible Materials

Metals, Oxidizing Agents, Metal Oxides, Combustible Materials, Halogens, Metallic Salts, Halo Carbons, Nitrogen Trifluoride, Oxygen Difluoride, Magnesium, Calcium

Hazardous Decomposition Products

Miscellaneous decomposition products

Section 11: Toxicology Information

The toxicology information is calculated for the mixture.

Acute Toxicity Estimates (ATE) of the mixture.

Oral ATE (mg/kg)	Not available
Inhalation ATE (ppm)	Not available
Dermal ATE (mg/kg)	Not available

Additional health hazards:

OSHA-H01: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Skin Corrosion/Irritation	Not available
Eye Damage/Irritation	Not available
Respiratory or Skin Sensitization	Not available
Germ Cell Mutagenicity	Not available
Carcinogenicity	Not available
Reproductive Toxicity	Not available
STOT – single exposure	Not available
STOT – repeated exposure	Not available
Aspiration Hazard	Not available

Section 12: Ecological Information

Fate and Transport

	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Helium	Fish toxicity: 0	Not Available.	Not Available.	Not Available.
Hydrogen	Fish toxicity: 0	Not Available.	Not Available.	Not Available.

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Do not dispose in sewers or waterways. Recycle if possible to do so. Return to manufacturer for disposal if needed.

Section 14: Transportation Information

Mixture Information

	US DOT	CA TDG	IATA	IMDG
Shipping Name	Compressed Gas, Flammable, N.O.S. (Helium, Hydrogen)	Compressed Gas, Flammable, N.O.S. (Helium, Hydrogen)	Compressed Gas, Flammable, N.O.S. (Helium, Hydrogen)	Compressed Gas, Flammable, N.O.S. (Helium, Hydrogen)
UN Number	UN1954	UN1954	UN1954	UN1954
Hazard Class	2.1 	2.1 	2.1 	2.1 
Hazard Information	FLAMMABLE GAS		QTY LIMITS (Pass/Cargo) Forbidden/30 kg	EmS F-D, s-u

Individual Component Information

	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Passenger Aircraft or Railcar Quantity Limitations		Cargo Aircraft Only Quantity Limitations		IMDG EmS
					DOT	IATA	DOT	IATA	
Helium	Helium, Compressed	UN1046	2.2	Not available	50 kg	Forbidden	500 kg	30 kg	F-C, S-V
Hydrogen	Hydrogen, compressed	UN1049	2.1	Not available	Forbidden	Forbidden	Forbidden	30 kg	F-D, s-u

Section 15: Regulatory Information

U.S. Regulations

	CERCLA Sections	RQ	TPQ
Helium	Not regulated	Not regulated	Not regulated
Hydrogen	Not regulated	Not regulated	Not regulated

SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
Helium	Yes	No	No	No	Yes
Hydrogen	Yes	No	Yes	No	Yes

SARA 372.65

Helium	Not regulated
Hydrogen	Not regulated

OSHA Process Safety

Helium	Not regulated
Hydrogen	Not regulated

State Regulations

	CA Proposition 65
Helium	Not listed
Hydrogen	Not listed

Canadian Regulations

	WHMIS Classification
Helium	A
Hydrogen	A, B1.

National Inventory Status

	US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
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Gas and Supply

Part Number: 60% HELIUM/40% HYDROGEN

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Helium	Helium	Not listed	Listed on DSL
Hydrogen	Hydrogen	Not listed	Listed on DSL

Section 16: Other Information

	NFPA Rating (Health, Fire, and Reactivity)
Helium	1 , 0 , 0
Hydrogen	0, 4, 0

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

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