Safety Data Sheet

Helium, refrigerated liquid

US Cylinder Gas
Alsip, IL

Section 1: Product and Company Identification

US Cylinder Gas
Alsip, IL

Product Code: **Liquid Helium**
Part Number: Helium Liquid

Synonyms: HE Liquid, Cryogenic Helium
Recommended Use: Industrial use. Medical Use. Specialty Use. Use as directed
Usage Restrictions:

Section 2: Hazards Identification

Warning

Hazard Classification: Gases Under Pressure, H281
Simple Asphyxiant, OSHA-H01

Hazard Statements: H281: Contains refrigerated gas; may cause cryogenic burns or injury.
CGA-HG01: MAY CAUSE FROSTBITE.
OSHA-H01: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary Statements

P202: Do not handle until all safety precautions have been read and understood.
P262: Do not get in eyes, on skin, or on clothing.
P280: Wear protective gloves, protective clothing, eye protection, and/or face protection.
P282: Wear cold insulating gloves, face shield, and eye protection.
P403: Store in a well-ventilated place.
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-PG23: Always keep container in upright position.
CGA-PG24: DO NOT change or force fit connections.
CGA-PG27: Read and follow the Safety Data Sheet (SDS) before use.

Section 3: Composition/Information on Ingredients

CAS #
7440-59-7

Chemical Substance	Chemical Family	Trade Names
HELIUM	Inorganic gases	HELIUM REFRIGERATED LIQUID; LIQUID HELIUM; HELIUM-4; ATOMIC HELIUM; UN 1046; He; UN 1963

Section 4: First Aid Measures

IF ON SKIN: Get immediate medical advice/attention. Thaw frosted parts with lukewarm water. Do not rub affected area.

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
Non-flammable

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. Liquid helium can freeze air, oxygen, and other gases.	Avoid soil, waterways, drains and sewers	Stop leak if possible without personal risk. Allow spilled liquid to evaporate.

Methods for Cleanup	Other Information
Stop leak, evacuate area. Contact emergency personnel. Test for sufficient oxygen, especially in confined areas, before allowing reentry.	None

Section 7: Handling and Storage

Handling	Storage
Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125F (52C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.	Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
HELIUM: ACGIH (simple asphyxiant)

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Eye protection not required, but recommended.	Cryogenic, protective clothing when required. Wear loose-fitting, cryogenic gloves.	Non-flammable

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
Cryogenic Liquid	Colorless	Colorless	N/A	Gas	Odorless

Taste	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits
Tasteless	Not flammable	Not available	Not available	Nonflammable	Nonflammable

Lower Explosive Limits	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity
Nonflammable	-452 F (-269 C)	-458 F (-272 C) @ 26 atm	1719 mmHg @ -268 C	0.138 (Air=1)	Not applicable

Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity	Molecular Weight
0.94% @ 0 C	Not applicable	Not available	High	0.02012 cP @ 26.8 C	4.0026

Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
He	0.1785 g/L @ 0 C	Not available	100%	Not applicable	Insoluble : Not available

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. Keep liquid helium from contact with air.	Avoid carbon steel.

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Miscellaneous decomposition products	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not available	Not available	Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, fatigue, dizziness, disorientation, emotional disturbances, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma

Eye Irritation	Skin Irritation	Sensitization
Liquid: frostbite, blurred vision	Liquid: frostbite	Difficulty breathing, can cause rapid suffocation

Chronic Effects

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

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Return empty container to supplier.

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
Helium, REFRIGERATED LIQUID	UN1963	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Helium, LIQUID	UN1963	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A

National Inventory Status

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

Section 16: Other Information

NFPA Rating
HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=SA

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