MY GAS

Product Name: Liquid Helium **MSDS No.:** MSDS002 **Date:** 28 September 2010

MY GAS MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name:	Liquid Helium	**Trade Name:**	Liquid Helium
Product Use:	Many	**UN Number:**	1963
Chemical Name:	Helium	**Synonym:**	Helium-4
Chemical Formula:	He	**Chemical Family:**	Rare Gas
Telephone: Emergencies:	010-072 0995 * 0861 HELIUM	**Supplier /Manufacture:** **Fax:** **Phone:**	My Gas 086 508 3271 010-072 0995

**Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your My Gas sales representative.*

2. Hazards Identification

EMERGENCY OVERVIEW

WARNING! Extremely cold liquid and gas under pressure. Can cause rapid suffocation. Can cause severe frostbite. Liquid or cold gas will freeze air in vent lines. May cause dizziness and drowsiness. Rescue workers may require self-contained breathing apparatus and protective clothing. This is a colourless, odourless, cryogenic liquid.

ROUTES OF EXPOSURE:	Inhalation. Swallowing. Skin contact. Eye contact.
EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:	
INHALATION:	Asphyxiate. Effects are due to lack of oxygen. Moderate concentrations may cause headaches, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.
SKIN CONTACT:	No harm expected from vapor. Liquid may cause frostbite.
SKIN ABSORPTION:	No evidence of adverse effects from available information. Liquid may cause frostbite.
SWALLOWING:	An unlikely route of exposure, but frostbite of the lips and mouth may result from contact with the liquid.
EYE CONTACT:	No harm expected from vapor. Liquid may cause frostbite.
EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:	No evidence of adverse effects from available information.
OTHER EFFECTS OF OVEREXPOSURE:	Asphyxiate. Lack of oxygen can kill.
MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:	A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.
SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:	None currently known.
CARCINOGENICITY:	Not listed as carcinogen.

3. Composition and Information on Ingredients

COMPONENTS:	Helium
UN NUMBER:	1963
CONCENTRATION % by Mole:	100

4. First Aid Measures

INHALATION:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
SKIN CONTACT:	Immediately warm frostbite area with warm water (not to exceed 40o C). In case of massive exposure, remove clothing and shoes while showering with warm water. Get medical

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	attention immediately.
SWALLOWING:	This product is a gas at normal temperature and pressure.
EYE CONTACT:	Immediately flush eyes with water for at least 15 minutes. See a physician, preferably an ophthalmologist, immediately.
NOTES TO PHYSICIAN:	There is no specific antidote. Treatment of over-exposure should be directed at the control of symptoms and the clinical condition.

5. Fire Fighting Measures

FLAMMABLE: No	**IF YES, UNDER WHAT CONDITIONS?** Not applicable.
EXTINGUISHING MEDIA: This material cannot catch fire. Use media appropriate for surrounding fire.	**PRODUCTS OF COMBUSTION:** None

PROTECTION OF FIREFIGHTERS:

CAUTION! Asphyxiate. Effects are due to lack of oxygen. Evacuate all personnel from danger area. Immediately deluge cylinders with water from maximum distance until cool; then move them away from fire area if without risk. Rescue workers may require self-contained breathing apparatus.

SPECIFIC PHYSICAL AND CHEMICAL HAZARDS:

Liquid or vapor cannot catch fire. Container may rupture due to heat of fire. Most containers are provided with a pressure relief device designed to vent contents when they are exposed to elevated temperature. Liquid causes cryogenic “burns” (frostbite-like injury). Liquid material will freeze water rapidly. Air will condense on exposed liquid or cold-gas surfaces, such as vaporizers and piping. Nitrogen, having a lower boiling point than oxygen, will evaporate first, leaving an oxygen-enriched condensation on the surface. To prevent the possible ignition of grease, oil, or other combustible materials on such surfaces, all areas of possible air condensation should be kept free of these materials.

SENSITIVITY TO IMPACT: Avoid impact against container.	**SENSITIVITY TO STATIC DISCHARGE:** Not applicable.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:

Fire fighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.

FLAMMABLE LIMITS IN AIR, % by volume:

LOWER: Not applicable.	**UPPER:** Not applicable.
FLASH POINT: Not applicable.	**AUTOIGNITION TEMPERATURE:** Not applicable.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

PERSONAL PRECAUTIONS:

CAUTION! High-pressure gas. Evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Shut off flow if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing re-entry.

ENVIRONMENTAL PRECAUTIONS:

Discard any product, residue, disposable container, or liner in an environmentally acceptable manner.

7. Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING:

Protect cylinders from damage. Use a suitable hand truck to move cylinders do not drag, roll, slide, or drop. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. If valve is hard to open, discontinue use and contact My Gas.

PRECAUTIONS TO BE TAKEN IN STORAGE:

Extremely cold liquid and gas. Contact with liquid or cold gas causes severe frostbite. Vapors can cause rapid suffocation due to oxygen deficiency. Protect containers against physical damage. Use piping and equipment adequately designed to withstand the pressures and temperatures to be encountered. Do not get liquid in eyes, on skin or clothing. Store and use with adequate ventilation. Close valve when not in use and when empty. Do not ground container.

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OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE: High-pressure gas. Use piping and equipment adequately designed to withstand pressures to be encountered. Gas can cause rapid suffocation due to oxygen deficiency. Store and use with adequate ventilation. Close valve after each use; keep closed even when empty. Prevent reverse flow. Reverse flow into cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. When returning cylinder to supplier, be sure valve is closed, then install valve outlet plug tightly. Never work on pressurized system. If there is a leak, close the cylinder valve. Vent the system down in a safe and environmentally sound manner in compliance with all federal, provincial, and local laws; then repair the leak. Never place a compressed gas cylinder where it may become part of an electrical circuit.
RECOMMENDED PUBLICATIONS: Additional information on storage, handling, and use of this product is available from the South African Compressed Gas Association (SACGA).

8. Exposure Controls/Personal Protection

INGREDIENTS	**UN NUMBER**	**LD50** ***(Species & Routes)***	**LC50** ***(Rat, 4 hrs.)***	**Exposure Limits**
Helium	1936	Not applicable	Not available	Simple asphyxiate

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH):	
VENTILATION/ENGINEERING CONTROLS:	
LOCAL EXHAUST:	Use a local exhaust system, if necessary, to maintain an adequate supply of oxygen in the worker's breathing zone.
MECHANICAL ***(General):***	Acceptable if it can maintain an adequate supply of oxygen in the worker's breathing zone.
SPECIAL:	None
OTHER:	None
PERSONAL PROTECTION:	
RESPIRATORY PROTECTION: Use air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below a safe level. Select in accordance with the South African regulations or guidelines.	
SKIN PROTECTION: Wear work gloves when handling cylinders.	
EYE PROTECTION: Wear safety glasses when handling cylinders.	
OTHER PROTECTIVE EQUIPMENT: Metatarsal shoes for cylinder handling. Protective clothing where needed.	

9. Physical and Chemical Properties

PHYSICAL STATE: Gas	**FREEZING POINT:** -272°C	**pH:** Not applicable
BOILING POINT: -268.9°C	**VAPOUR PRESSURE:** NA	**MOLECULAR WEIGHT:** 4g/mole
EVAPORATION RATE: High	**ODOUR THRESHOLD:** Odourless	**SOLUBILITY IN WATER:** Negligible

SPECIFIC GRAVITY: 0.147 @ -271C LIQUID (water=1)	**COEFFICIENT OF WATER/OIL DISTRIBUTION:** NA
SPECIFIC GRAVITY: 0.14g/ml @ 21.1 C VAPOUR (air=1)	**VAPOUR DENSITY:** 0.000165 g/ml @ 21.1 C
% VOLATILES BY VOLUME: 100% (v/v)	**APPEARANCE & ODOUR:** Colourless. Odourless

10. Stability and Reactivity

STABILITY:	The product is stable.
CONDITIONS OF CHEMICAL INSTABILITY:	None
INCOMPATIBILITY ***(materials to avoid):***	None
HAZARDOUS DECOMPOSITION PRODUCTS:	None
HAZARDOUS POLYMERIZATION:	Will not occur.
CONDITIONS TO AVOID:	None Known.
CONDITIONS OF REACTIVITY:	None Known.

11. Toxicological Information

ACUTE DOSE EFFECTS:	Helium is a simple asphyxiate.
STUDY RESULTS:	None known.

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12. Ecological Information

No adverse ecological effects expected. This product does not contain any Class I or Class II ozone depleting chemicals.

13. Disposal Considerations

WASTE DISPOSAL METHOD:	Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

14. Transport Information

	TDG/IMO SHIPPING NAME:	Helium, Refrigerated Helium
HAZARD CLASS: CLASS 2.2: Non-flammable, non-corrosive and non-poisonous gas.	**IDENTIFICATION #:** UN1936	**PRODUCT RQ:** Any accidental release in a quantity that could pose a danger to public safety or any sustained release of 10 minutes or more.
SHIPPING LABEL(s):	Non-flammable, non-poisonous gas	
PLACARD *(When Required)*:	Non-flammable, non-poisonous gas	

SPECIAL SHIPPING INFORMATION:
Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, non-ventilated compartment of vehicle can present serious safety hazards.

15. Regulatory Information

Users of this product are solely responsible for compliance with all applicable laws and local regulations.

16. Other Information

MIXTURES:
When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

My Gas asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.