



PRODUCT NAME: HELIUM, GAS

1. Chemical Product and Company Identification

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PRODUCT NAME: HELIUM, GAS

CHEMICAL NAME: Helium

COMMON NAMES/SYNONYMS: Helium; Helium, compressed; Helium-4

2. Composition, Information on Ingredients

Ingredient	% Volume	TLV-ACGIH ²
Helium FORMULA: He	99.999%	Simple Asphyxiant

3. Hazards Identification

EMERGENCY OVERVIEW

Simple Asphyxiant - This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. Nonflammable.

ROUTE OF ENTRY:

Skin Contact Yes	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion No
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HEALTH EFFECTS:

Exposure Limits: No
Irritant: No
Sensitization: No
Teratogen: No
Reproductive Hazard: No
Mutagen: No
Synergistic Effects: None reported

EYE EFFECTS:

No adverse effects anticipated.

SKIN EFFECTS:

No adverse effects anticipated.

INGESTION EFFECTS:

No adverse effects anticipated.



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INHALATION EFFECTS:

Product is a non-toxic simple Asphyxiant. Effects of oxygen deficiency resulting from simple Asphyxiant may include: rapid breathing, diminished mental alertness, impaired muscular coordination, and faulty judgment, depression of all sensations, emotional instability and fatigue. As asphyxiation progresses, nausea, vomiting, prostration and loss of consciousness may result, eventually leading to convulsions, coma and death.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

4. First Aid Measures

EYES:

Never introduce ointment or oil into the eyes without medical advice! If pain is present, refer the victim to an ophthalmologist for treatment and follow up.

SKIN:

No adverse effects anticipated.

INGESTION:

Ingestion is not anticipated.

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and if breathing has stopped, administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

5. Fire Fighting Measures

Conditions of Flammability	Flash Point	Method
Not Flammable	None	Not applicable
Auto-ignition Temperature	LEL %	UEL %
None	None	None
Hazardous combustion products	Sensitivity to mechanical shock	Sensitivity to static discharge
None	None	None

FIRE AND EXPLOSION HAZARDS:

None. Nonflammable

EXTINGUISHING MEDIA:

None required. Use as appropriate for surrounding materials.

6. Accidental Release Measures

Evacuate all personnel from the affected area. Use appropriate protective equipment. If leak is in container or container valve, contact the appropriate person in **Linde Gas Middle East LLC**.

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7. Handling and Storage

Electrical classification:

Non-hazardous.

This gas mixture is non-corrosive and may be used with all common structural materials.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve protection outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where Falling or being knocked over. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

For additional recommendations, consult Compressed Gas Association Pamphlets P-1, P-14, P-9, and Safety Bulletin SB-2.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS¹:

Ingredient	% Volume	TLV-ACGIH ²
Helium FORMULA: He	99.999%	Simple Asphyxiant

ENGINEERING CONTROLS:

Local exhaust to prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 19.5%.

EYE/FACE PROTECTION:

Safety goggles or glasses as appropriate for the job.

SKIN PROTECTION:

Protective gloves of material appropriate for the job.

RESPIRATORY PROTECTION:

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

OTHER/GENERAL PROTECTION:

Safety shoes or other footwear as appropriate for the job.


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9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not Available	
Vapor density (Air = 1)	: 0.14 (Gas)	
Evaporation point	: Not Available	
Boiling point	: -452.1	
	: -268.9	
Freezing point	: Not Available	
pH	: Not Applicable	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Negligible	
Odor threshold	: Not Applicable	
Odor and appearance	: Colorless, odorless gas	

10. Stability and Reactivity

STABILITY:

Stable

INCOMPATIBLE MATERIALS:

None

HAZARDOUS POLYMERIZATION:

Does not occur.

11. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to **Linde Gas Middle East LLC** or authorized distributor for proper disposal.

12. Transport Information

Parameter	United States DOT
Proper Shipping Name	Helium, compressed
Hazard Class	2.2
Identification Number	UN 1046
Shipping Label	Non Flammable Gas

13. Hazard Classes

Sudden Release of Pressure Hazard.

14. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of transportation regulations.

**PRODUCT NAME: HELIUM, GAS****DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:**

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