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## 1 Identification of Substance

### Product Details

**Trade Name:** Helium, compressed gas**Product No:** G-5**Manufacturer/Supplier:**

Linde  
575 Mountain Avenue  
Murray Hill, NJ 07974 USA  
ph: 908-464-8100

Linde Gas Puerto Rico, Inc.  
Las Palmas Village  
Road No. 869, Street No. 7  
Catano, Puerto Rico 00962  
ph: 787-754-7445

Linde Canada Limited  
5860 Chedworth Way  
Mississauga, Ontario L5R 0A2  
ph: 905-501-1700

**Information Department:**

Linde U.S. National Operations Center: 1-800-232-4726 (for US and Puerto Rico assistance)

**Emergency Information:**

For U.S & Puerto Rico, CHEMTREC 24-HOUR EMERGENCY TELEPHONE NUMBER: 800-424-9300  
For Canada, 24-HOUR EMERGENCY TELEPHONE NUMBER: 905-501-0802

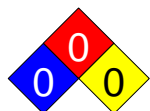
## 2 Hazards Identification

**Hazard Description:**

Helium is a colorless, odorless inert gas. Helium is a simple asphyxiant. Maintain oxygen levels above 19.5%. Contents under pressure. Use and store below 125°F.

**Emergency Overview:**

This product does not contain oxygen and may cause asphyxia if released in a confined area. Intentional misuse of this product can cause serious lung damage or death. Contact with rapidly venting helium gas near the point of release may cause frostbite.

**CLASSIFICATION SYSTEM:****NFPA Ratings (scale 0 - 4)**

Health = 0  
Fire = 0  
Instability = 0  
Special = SA

**HMIS Ratings (scale 0 - 4)**

Health = 0  
Fire = 0  
Physical Hazard = 3

## 3 Composition/Data on Components

**CAS No. Description**

7440-59-7 Helium, compressed gas

**IDENTIFICATION NUMBER(S):**

EINECS Number: 231-168-5

## 4 First aid measures

**After Inhalation:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Conscious persons 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

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uncontaminated area and, if breathing has stopped, administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

**After skin contact:**

None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

**After eye contact:**

None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

**After ingestion:** None expected, as helium is a gas at room temperature.

## 5 Fire fighting measures

**Flammable Properties:**

Nonflammable. Cylinder may rupture violently from pressure or vent rapidly when involved in a fire situation.

**Suitable extinguishing agents:**

None required. Use extinguishing media appropriate for the combustible material present.

**Protective equipment:**

Firefighters should wear approved NIOSH/MSHA full facepiece self-contained breathing apparatus (SCBA) and full turnout or Bunker gear.

**Fire Fighting Instructions:**

Continue to cool fire-exposed containers until well after flames are extinguished.

## 6 Accidental release measures

**Person-related safety precautions:**

Evacuate all personnel from the affected area. Use appropriate personal protective equipment (see Section 8). Stop the flow of gas or remove cylinder to outdoor location - ONLY if possible to do so without risk. Ventilate enclosed areas. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest Linde location.

## 7 Handling and storage

**HANDLING:****Information about protection against explosions and fires:**

Store in a cool, dry area away from combustibles, sunlight, incompatible materials, and sources of heat or ignition. Ensure adequate ventilation.

**STORAGE:****Requirements to be met by storerooms and receptacles:**

This product mixture is noncorrosive and may be used with all common structural materials.

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Use only in well-ventilated areas in accordance with manufacturer's and Linde's instructions. Do not tip, drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Valve protection caps must remain in place unless container is secured with valve outlet piped to the use point. Use a pressure-reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat container 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 system. If user experiences any difficulty operating container valve, discontinue use and contact supplier. Do not insert any object (i.e., screwdriver) into valve cap openings as this can damage valve, causing leakage.

Protect containers from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

For additional recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9 and P-18, and Safety Bulletins SB-2 and SB-14.

**Specific applications:**

Proper handling, storage and operation of regulating equipment and cylinders is required to safely fill helium balloons. DO NOT ALLOW CHILDREN or unqualified people to operate balloon filling equipment. INTENTIONAL INHALATION OF HELIUM CAN CAUSE SERIOUS LUNG DAMAGE OR DEATH. A balloon-filling helium regulator must be attached to the valve before it is opened. Close cylinder valve after each use and when empty. Do not use in poorly ventilated areas or attempt to remove stuck or jammed protective caps. Check for leaks and do not use leaky equipment. Do not use helium unless cylinder is properly labeled. Do not attempt to transfer helium from cylinder into any other container. Do not substitute hydrogen (a highly flammable gas) for helium.

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.

**Security:**

Store container in a secured area. Limit access to authorized personnel only. Report any incidents involving thefts, misuse, or inventory shortages (missing containers or cylinders) to law enforcement and the supplier. Security shall be provided in accordance with all local, state (provincial) and federal regulations.

**8 Exposure controls and personal protection****Engineering Controls:**

Use local exhaust in combination with general ventilation systems as necessary to prevent accumulation of helium concentrations above acceptable exposure limits and to maintain oxygen levels in air above 19.5%.

**Components with limit values that require monitoring at the workplace:****Helium, compressed gas**

TLV Simple asphyxiant

**PERSONAL PROTECTIVE EQUIPMENT:****Breathing equipment:**

For emergency release, use a positive pressure NIOSH-approved air-supplying respirator system (SCBA or airline/escape bottle) using a full-face mask and at a minimum Grade D air.

**Hand/skin protection:** Protective gloves and clothing appropriate for the job.

**Eye/face protection:** Safety goggles or glasses as appropriate for the job.

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**Other/General Protection:**

Safety shoes or other footwear appropriate for the job, safety shower and emergency eyewash station.

## 9 Physical and chemical properties

**GENERAL INFORMATION:**

<b>Form:</b>	Gas
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless

**CHANGE IN CONDITION:**

<b>Melting point/Melting range:</b>	Not available
<b>Boiling point/Boiling range:</b>	-268.9°C (-452°F)

<b>Flash point:</b>	Not applicable
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<b>Vapor pressure:</b>	Not available
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<b>Density:</b>	Vapor density for hydrogen is 0.07
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<b>Solubility in / Miscibility with Water at 0°C (32°F):</b>	0.0094 vol/vol
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## 10 Stability and reactivity

**Thermal decomposition / Conditions to be avoided:** Stable

**Materials to be avoided:** None. Product is an inert gas.

**Dangerous reactions:** None

**Dangerous products of decomposition:** None

## 11 Toxicological information

**ACUTE TOXICITY**
**Toxicological Overview:** Helium is a simple asphyxiant. See "Inhalation Effects" section below.

**PRIMARY IRRITANT EFFECT:**
**On the skin:**

Not expected to cause skin irritation. Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

**On the eye:**

Not expected to cause eye irritation. Contact with rapidly expanding gas near the point of release may cause frostbite.

**On inhalation:**

High concentrations of helium may exclude an adequate supply of oxygen to the lungs. Effects of oxygen deficiency resulting from simple asphyxiation may include rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, 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.

Intentional inhalation of helium balloon gas can cause asphyxiation, lung damage and death.

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**Other information (about experimental toxicology):**

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

## 12 Ecological information

**Environmental impact:**

Not classified as a Class I or Class II ozone depleting substance. Not toxic. Will not bioaccumulate.

## 13 Disposal considerations

**PRODUCT:**
**Recommendation:**

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

## 14 Transport information

**DOT regulations:**


**Hazard class:** 2  
**Identification number:** UN1046  
**Packing group:** -  
**Proper shipping name (technical name):** HELIUM, COMPRESSED  
**Label:** 2.2

**Land transport ADR/RID (cross-border):**


**ADR/RID class:** 2 1A Gases  
**Danger code (Kemler):** 20  
**UN-Number:** 1046  
**Packaging group:** -  
**Label:** 2.2  
**Description of goods:** 1046 HELIUM, COMPRESSED

**Maritime transport IMDG:**


**IMDG Class:** 2.2  
**UN Number:** 1046  
**Label:** 2.2

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<b>Packaging group:</b>	-
<b>EMS Number:</b>	F-C,S-V
<b>Proper shipping name:</b>	HELIUM, COMPRESSED

**Air transport ICAO-TI and IATA-DGR:**

<b>ICAO/IATA Class:</b>	2
<b>UN/ID Number:</b>	1046
<b>Label</b>	2.2
<b>Packaging group:</b>	-
<b>Proper shipping name:</b>	HELIUM, COMPRESSED

**15 Regulations****SARA****Section 355 (extremely hazardous substances):** Substance is not listed.**Section 313 (Specific toxic chemical listings):** Substance is not listed.**TSCA (Toxic Substance Control Act):**

The substance is listed.

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**PROPOSITION 65:****Chemicals known to cause cancer:** Substance is not listed.**Chemicals known to cause reproductive toxicity for females:** Substance is not listed.**Chemicals known to cause reproductive toxicity for males:** Substance is not listed.**Chemicals known to cause developmental toxicity:** Substance is not listed.**CARCINOGENICITY CATEGORIES:****EPA (Environmental Protection Agency)** Substance is not listed.**IARC (International Agency for Research on Cancer)** Substance is not listed.**NTP (National Toxicology Program)** Substance is not listed.**TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.**NIOSH (National Institute for Occupational Safety and Health)** Substance is not listed.**OSHA (Occupational Safety & Health Administration)** Substance is not listed.**Product related hazard informations:****Safety phrases:** 3/7 Keep container tightly closed in a cool place.**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department Issuing MSDS:** Linde Safety, Health, Environment and Quality**Contact:** Refer to Linde web site for contact and product information at [www.lindeus.com](http://www.lindeus.com).**Sources:**

ABBREVIATIONS AND ACRONYMS:

ADR/RID: Agreement on Dangerous Goods by Road/Regulation concerning the International Transport of Goods by Rail

CAS: Chemical Abstracts Service

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DOT: US Department of Transportation  
EINECS: European Inventory of Existing Chemical Substances  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
HMIS: Health Management Information System  
IATA: International Air Transport Organization  
IATA-DGR: Dangerous Goods Regulations by the International Air Transport Organization  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the International Civil Aviation Organization  
IMDG: International Marine Code for Dangerous Goods  
NFPA: National Fire Protection Association

**GENERAL DISCLAIMER**

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between Linde LLC, Linde Merchant Products or Linde Gas North America LLC (or any of their affiliates and subsidiaries) and the purchaser.

**DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES**

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