



# HELIUM, GAS

## Material Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **HELIUM, GAS**

Product Code(s) **G-5, 1013**

UN-No **UN1046**

Recommended Use **Compressed gas.**

Synonyms **LASER Helium; LASER Helium Ultra; Helium; Helium, compressed; Helium-4**

Supplier Address\*  
 Linde Gas North America LLC - Linde Merchant Production Inc. - Linde LLC  
 575 Mountain Ave.  
 Murray Hill, NJ 07974  
 Phone: 908-464-8100  
 www.lindeus.com

Linde Gas Puerto Rico, Inc.  
 Las Palmas Village  
 Road No. 869, Street No. 7  
 Catano, Puerto Rico 00962  
 Phone: 787-641-7445  
 www.pr.lindegas.com

Linde Canada Limited  
 5860 Chedworth Way  
 Mississauga, Ontario L5R 0A2  
 Phone: 905-501-1700  
 www.lindecana.com

\* May include subsidiaries or affiliate companies/divisions.

For additional product information contact your local customer service.

Chemical Emergency Phone Number **Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US**

### 2. HAZARDS IDENTIFICATION

**WARNING!**

#### Emergency Overview

Simple asphyxiant  
 Contents under pressure  
 Intentional misuse of this product can cause serious lung damage or death.  
 Keep at temperatures below 52°C / 125°F

**Appearance** Colorless

**Physical State** Compressed gas.

**Odor** Odorless

OSHA Regulatory Status **This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).**

Potential Health Effects

Principle Routes of Exposure	Inhalation.
Acute Toxicity	
Inhalation	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.  Intentional inhalation of helium balloon gas can cause asphyxiation, lung damage, and death.
Eyes	None known.
Skin	None known.
Skin Absorption Hazard	No known hazard in contact with skin.
Ingestion	None known.
Chronic Effects	None known.
Aggravated Medical Conditions	None known.
Environmental Hazard	See Section 12 for additional Ecological Information.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Volume %	Chemical Formula
Helium	7440-59-7	>99	He

### 4. FIRST AID MEASURES

Eye Contact	None under normal use. Get medical attention if symptoms occur.
Skin Contact	None under normal use. Get medical attention if symptoms occur.
Inhalation	PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, administer oxygen. Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen. Treatment should be symptomatic and supportive.
Ingestion	None under normal use. Get medical attention if symptoms occur.
Notes to Physician	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

Flammable Properties	Not flammable.
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<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b><u>Explosion Data</u></b>	
<b>Sensitivity to Mechanical Impact</b>	None
<b>Sensitivity to Static Discharge</b>	None
<b>Specific Hazards Arising from the Chemical</b>	Cylinders may rupture under extreme heat. Continue to cool fire exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.
<b>Protective Equipment and Precautions for Firefighters</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment. Monitor oxygen level.
<b>Environmental Precautions</b>	Prevent spreading of vapors through sewers, ventilation systems and confined areas.
<b>Methods for Containment</b>	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Linde location.
<b>Methods for Cleaning Up</b>	Return cylinder to Linde or an authorized distributor.

## 7. HANDLING AND STORAGE

<b>Handling</b>	<p>Use only in ventilated areas. Never attempt to lift a cylinder by its valve protection cap. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur.</p> <p>Proper handling, storage of regulating equipment and cylinders is required to safely fill helium balloons. <b>DO NOT ALLOW CHILDREN OR UNQUALIFIED PEOPLE TO OPERATE BALLOON FILLING EQUIPMENT. INTENTIONAL INHALATION OF HELIUM CAN CAUSE SERIOUS LUNG DAMAGE OR DEATH.</b> A balloon filling helium regulator must be attached to the valve before it is opened.</p> <p>Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.</p> <p>Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.</p> <p>For additional recommendations, consult Compressed Gas Association's pamphlets P-1, P-9, P-9.1, P-18, SB-14 and Safety Bulletin SB-2.</p>
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**Storage** Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. 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. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%.

**Ventilation** Ensure adequate ventilation, especially in confined areas.

**Personal Protective Equipment**

**Eye/Face Protection** Wear protective eyewear (safety glasses).

**Skin and Body Protection** Work gloves and safety shoes are recommended when handling cylinders.

**Respiratory Protection**

**General Use** No special protective equipment required.

**Emergency Use** Use positive pressure airline respirator with escape cylinder or self contained breathing apparatus for oxygen-deficient atmospheres (<19.5%).

**Hygiene Measures** Wear suitable gloves and eye/face protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Colorless.	<b>Odor</b>	Odorless.
<b>Odor Threshold</b>	No information available.	<b>Physical State</b>	Compressed gas
<b>Flash Point</b>	No information available.	<b>Autoignition Temperature</b>	No information available.
<b>Decomposition Temperature</b>	No information available.	<b>Boiling Point/Range</b>	-268.9°C / -452.1°F
<b>Freezing Point</b>	No information available	<b>Molecular Weight</b>	4.00
<b>Water Solubility</b>	0.0094 vol/vol @ 0°C	<b>Evaporation Rate</b>	No information available
<b>Vapor Pressure</b>	No data available.	<b>Vapor Density</b>	0.14 (air = 1)
<b>Gas Density</b>	(at 21.1°C/70°F) 0.0103 lb/ft <sup>3</sup> (0.165 kg/m <sup>3</sup> )	<b>VOC Content (%)</b>	Not applicable.
<b>Specific Vol. @ 21.1°C &amp; 1 atm</b>	97.09 ft <sup>3</sup> /lb (6.061 m <sup>3</sup> /kg)	<b>Critical Pressure</b>	33.0 psia (227 kPa abs)
<b>Flammability Limits in Air</b>			
<b>Upper</b>	Not applicable		
<b>Lower</b>	Not applicable		

## 10. STABILITY AND REACTIVITY

**Stability** Stable.

**Incompatible Products** None known.

Conditions to Avoid	None known.
Hazardous Decomposition Products	None known based on information supplied.
Hazardous Polymerization	Hazardous polymerization does not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

LD50 Oral:	No information available.
LD50 Dermal:	No information available.
LC50 Inhalation:	No information available.
Repeated Dose Toxicity	No information available.

### Chronic Toxicity

Chronic Toxicity	None known.
Carcinogenicity	Contains no ingredient listed as a carcinogen.

Irritation	No information available.
Sensitization	No information available.
Reproductive Toxicity	No information available.
Developmental Toxicity	Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.
Synergistic Materials	None known.
Target Organ Effects	None known.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1): Does not contain ozone depleting chemical (40 CFR Part 82).

## 13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	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 for proper disposal.
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## 14. TRANSPORT INFORMATION

### DOT

Proper Shipping Name	Helium, compressed
Hazard Class	2.2
Subsidiary Class	None
UN-No	UN1046
Description	UN1046,Helium, compressed,2.2
Emergency Response Guide Number	121

### TDG

Proper Shipping Name	Helium, compressed
Hazard Class	2.2
UN-No	UN1046
Description	UN1046,HELIUM, COMPRESSED,2.2

### MEX

Proper Shipping Name	Helium, compressed
Hazard Class	2.2
UN-No	UN1046
Description	UN1046, Helium, compressed,2.2

### IATA

UN-No	UN1046
Proper Shipping Name	Helium, compressed
Hazard Class	2.2
ERG Code	2L
Description	UN1046,Helium, compressed,2.2
Maximum Quantity for Passenger	75 kg
Maximum Quantity for Cargo Only	150 kg
Limited Quantity	No information available.

### IMDG/IMO

Proper Shipping Name	Helium, compressed
Hazard Class	2.2
UN-No	UN1046
EmS No.	F-C, S-V
Description	UN1046, Helium, compressed,2.2

### ADR

Proper Shipping Name	Helium, compressed
Hazard Class	2.2
UN-No	UN1046
Classification Code	1A
Description	UN1046, Helium, compressed,2.2

## 15. REGULATORY INFORMATION

### International Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies

### Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

#### Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

#### Risk and Process Safety Management Programs

This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68.

This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

#### Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

#### CERCLA/SARA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

### U.S. State Regulations

#### California Proposition 65

This product does not contain any Proposition 65 chemicals.

### U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Helium	X	X	X	-	X

International Regulations

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class  
A Compressed gases



16. OTHER INFORMATION

Prepared By Product Stewardship  
23 British American Blvd.  
Latham, NY 12110  
1-800-572-6501

Issuing Date 04-Mar-2010

Revision Date 25-Aug-2010

Revision Number 1

Revision Note (M)SDS sections updated. 1.

<u>NFPA</u>	Health Hazard 0	Flammability 0	Stability 0	Physical and Chemical Hazards Simple asphyxiant
<u>HMIS</u>	Health Hazard 0	Flammability 0	Physical Hazard 3	Personal Protection -

**Note:** Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

General Disclaimer

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

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End of Safety Data Sheet