




## Safety Data Sheet

Material Name: Helium

### \*\*\*Section 1 - IDENTIFICATION\*\*\*

<b>GHS product identifier</b>	Helium
<b>Chemical name</b>	Helium
<b>Other means of identification</b>	helium (dot); Helium-4; He; o-Helium; UN 1046, Helium USP
<b>Product use</b>	Synthetic/Analytical chemistry.
<b>Synonym</b>	helium (dot); Helium-4; He; o-Helium; UN 1046, Helium USP
<b>Supplier's details</b>	Electronic Fluorocarbons 3266 Bergey Road Hatfield PA 19440
<b>Emergency Telephone #</b>	1-800-535-5053
<b>Outside the US (call collect)</b>	1-352-323-3500

### \*\*\*Section 2 - HAZARDS IDENTIFICATION\*\*\*

<b>OSHA/HCS status</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Classification of the substance or mixture</b>	GASES UNDER PRESSURE - Compressed gas
<b>GHS label elements</b>	
<b>Hazard pictograms</b>	
<b>Signal word</b>	Warning
<b>Hazard statements</b>	Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.
<b>Precautionary statements</b>	
<b>General</b>	Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.
<b>Prevention</b>	Not applicable.
<b>Response</b>	Not applicable.
<b>Storage</b>	Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.
<b>Disposal</b>	Not applicable.
<b>Hazards not otherwise classified</b>	In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

# Safety Data Sheet

Material Name: Helium

## \*\*\*Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS\*\*\*

Substance/mixture                      Substance

Chemical name                              Helium

Other means of identification      helium (dot); Helium-4; He; o-Helium; UN 1046,Helium USP

### CAS number/other identifiers

CAS number                                  7440-59-7

Product code                                001025

Ingredient name	%	CAS number
Helium	100	7440-59-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## \*\*\*Section 4 - FIRST AID MEASURES\*\*\*

### Description of necessary first aid measures

<b>Eye contact</b>	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	As this product is a gas, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	Contact with rapidly expanding gas may cause burns or frostbite.
<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	Contact with rapidly expanding gas may cause burns or frostbite.
<b>Frostbite</b>	Try to warm up the frozen tissues and seek medical attention.
<b>Ingestion</b>	As this product is a gas, refer to the inhalation section.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	No specific data.
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	No specific treatment.

# Safety Data Sheet

Material Name: Helium

**Protection of first-aiders** No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## \*\*\*Section 5 - FIRE FIGHTING MEASURES\*\*\*

### Extinguishing media

**Suitable extinguishing media** Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** None known.

**Specific hazards arising from the chemical** Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

**Hazardous thermal decomposition products** No specific data.

**Special protective actions for fire-fighters** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## \*\*\*Section 6 - ACCIDENTAL RELEASE MEASURES\*\*\*

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** Immediately contact emergency personnel. Stop leak if without risk.

**Large spill** Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## \*\*\*Section 7 - HANDLING AND STORAGE\*\*\*

### Precautions for safe handling

**Protective measures** Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

# Safety Data Sheet

Material Name: Helium

## Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## \* \* \*Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION\* \* \*

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Helium	Oxygen Depletion [Asphyxiant]

#### Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

#### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

#### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

#### Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

# Safety Data Sheet

Material Name: Helium

\*\*\*Section - - D\ ngjWU'UbX'7\ Ya jWU'DfcdYf]h]Yg\*\*\*

## Appearance

Physical state	Gas. [Compressed gas.]
Color	Colorless.
Molecular weight	4 g/mole
Molecular formula	He
Boiling/condensation point	-268.9°C (-452°F)
Melting/freezing point	-272.2°C (-458°F)
Critical temperature	-267.9°C (-450.2°F)
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Flash point	[Product does not sustain combustion.]
Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.
Vapor density	0.14 (Air = 1)    Liquid Density@BP: 7.8 lb/ft <sup>3</sup> (125 kg/m <sup>3</sup> )
Specific Volume (ft <sup>3</sup> /lb)	96.1538
Gas Density (lb/ft <sup>3</sup> )	0.0104
Relative density	Not applicable.
Solubility	Not available.
Solubility in water	Not available.
Partition coefficient: n-octanol/water	0.28
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Not applicable.

## \*\*\*Section 10 - STABILITY AND REACTIVITY\*\*\*

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

# Safety Data Sheet

Material Name: Helium

## Irritation/Corrosion

Not available.

## Sensitization

Not available.

## Mutagenicity

Not available.

## Carcinogenicity

Not available.

## Reproductive toxicity

Not available.

## Teratogenicity

Not available.

## Specific target organ toxicity (single exposure)

Not available.

## Specific target organ toxicity (repeated exposure)

Not available.

## Aspiration hazard

Not available.

Information on the likely routes of exposure Not available.

## Potential acute health effects

<b>Eye contact</b>	Contact with rapidly expanding gas may cause burns or frostbite.
<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	Contact with rapidly expanding gas may cause burns or frostbite.
<b>Ingestion</b>	As this product is a gas, refer to the inhalation section.

## Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	No specific data.
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

## Delayed and immediate effects and also chronic effects from short and long term exposure

### Short term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

### Long term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

## Potential chronic health effects

Not available.

<b>General</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.

# Safety Data Sheet

Material Name: Helium

## \*\*\*Section 11 - TOXICOLOGICAL INFORMATION\*\*\*

**Mutagenicity** No known significant effects or critical hazards.  
**Teratogenicity** No known significant effects or critical hazards.  
**Developmental effects** No known significant effects or critical hazards.  
**Fertility effects** No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## \*\*\*Section 12 - ECOLOGICAL INFORMATION\*\*\*

### **Toxicity**

Not available.

### **Persistence and degradability**

Not available.

### **Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Helium	0.28	-	low

### **Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

### **Other adverse effects**






No known significant effects or critical hazards.

## \*\*\*Section 13 - DISPOSAL CONSIDERATIONS\*\*\*

### **Disposal methods**

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## \*\*\*Section 14 - Transport Information\*\*\*

	DOT	TDG	Mexico	IMDG	IATA
<b>UN number</b>	UN1046	UN1046	UN1046	UN1046	UN1046
<b>UN proper shipping name</b>	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED
<b>Transport hazard class(es)</b>	2.2 	2.2 	2.2 	2.2 	2.2 

# Safety Data Sheet

Material Name: Helium

Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<u>Limited quantity</u> Yes.  <u>Packaging instruction</u> <b>Passenger aircraft</b> Quantity limitation: 75 kg  <b>Cargo aircraft</b> Quantity limitation: 150 kg	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).  <u>Explosive Limit and Limited Quantity Index</u> 0.125  <u>Passenger Carrying Road or Rail Index</u> 75	-	-	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 75 kg <u>Cargo Aircraft Only</u> Quantity limitation: 150 kg

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

**Special precautions for user**    **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**    Not available.

**\*\*\*Section 15 - REGULATORY INFORMATION\*\*\***

**U.S. Federal regulations**    **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** This material is listed or exempted.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)**    Not listed

**Clean Air Act Section 602 Class I Substances**    Not listed

**Clean Air Act Section 602 Class II Substances**    Not listed

**DEA List I Chemicals (Precursor Chemicals)**    Not listed

**DEA List II Chemicals (Essential Chemicals)**    Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ**    Not applicable.

**SARA 311/312**

**Classification**    Sudden release of pressure

**Composition/information on ingredients**

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Helium	100	No.	Yes.	No.	No.	No.



# Safety Data Sheet

Material Name: Helium

## State regulations

Massachusetts	This material is listed.
New York New Jersey	This material is not listed.
Pennsylvania	This material is listed.
	:his material is listed.

## International regulations

### International lists

### National inventory

Australia	This material is listed or exempted.
Canada	This material is listed or exempted.
China	This material is listed or exempted.
Europe	This material is listed or exempted.
Japan	Not determined.
Malaysia	Not determined.
New Zealand	This material is listed or exempted.
Philippines	This material is listed or exempted.
Republic of Korea	This material is listed or exempted.
Taiwan	This material is listed or exempted.

## Canada

### WHMIS (Canada)

Class A: Compressed gas.

**CEPA Toxic substances:** This material is not listed.

**Canadian ARET:** This material is not listed.

**Canadian NPRI:** This material is not listed.

**Alberta Designated Substances:** This material is not listed.

**Ontario Designated Substances:** This material is not listed.

**Quebec Designated Substances:** This material is not listed.

## \* \* \*Section 16 - OTHER INFORMATION\* \* \*

**Canada Label requirements** Class A: Compressed gas.

### NFPA Ratings

Health: 0 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

### Other Information

Electronic Fluorocarbons makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Electronic Fluorocarbons shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.