

**MATERIAL SAFETY DATA SHEET**

Helium



File No.: 1032

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**Helium:**  
 Helium Gas
 

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**1. Chemical Product and Company Identification**


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**SpecAir Specialty Gases, Chemicals & Technology**  
 22 Albiston Way  
 Auburn, ME  
 04210

**TELEPHONE NUMBER:** 800-292-6218  
**FAX NUMBER:** 207-777-6215  
**E-MAIL:** [info@SpecAir.com](mailto:info@SpecAir.com)

**24-HOUR EMERGENCY NUMBER:** 1-800-535-5053

**PRODUCT NAME:** Helium  
**CHEMICAL NAME:** Helium Gas  
**COMMON NAMES/ SYNONYMS:** Helium, Ultra High Purity Helium, Zero Helium  
**TDG (Canada) CLASSIFICATION:** 2.2  
**WHIMIS CLASSIFICATION:** A

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**2. Composition / Information on Ingredients**


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|   | % VOLUME           | PEL-OSHA2        | TLV-ACGIH3        | LD50 OR LC50<br>Route/Species |
|---|--------------------|------------------|-------------------|-------------------------------|
| Helium<br>Formula: He<br>CAS #: 7440-59-7<br>RTECS #: MH6520000 | 99.99% to 99.9999% | None Established | Simple Asphyxiant | Not Available                 |

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**3. HAZARDS IDENTIFICATION**


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**EMERGENCY OVERVIEW**

Odorless, colorless, non-flammable gas. Simple Asphyxiant – This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. Contents under pressure. Use and store below 125°F, (52°C).

**ROUTE OF ENTRY:**

| Skin Contact | Skin Absorption | Eye Contact | Inhalation | Ingestion |
|--------------|-----------------|-------------|------------|-----------|
| No           | No              | No          | Yes        | No        |

**CARCINOGENICITY:**

**NTP:** No

**IARC:** No

**OSHA:** No

**Eye Effects:**

None anticipated.

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**Skin Effects:**

Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white and blistering.

**Ingestion Effects:**

Ingestion is unlikely.

**Inhalation Effects:**

Product is a simple asphyxiant. This product may displace oxygen if released in a confined space. Maintain oxygen levels above 19.5% at sea level to prevent asphyxiation. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, 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.

**NFPA Hazard Codes**

|               |   |
|---------------|---|
| Health:       | 0 |
| Flammability: | 0 |
| Reactivity:   | 0 |

**HMS Hazard Codes**

|                  |   |
|------------------|---|
| Health:          | 0 |
| Flammability:    | 0 |
| Physical Hazard: | 3 |

**Rating System**

|    |                 |
|----|-----------------|
| 0= | No Hazard       |
| 1= | Slight Hazard   |
| 2= | Moderate Hazard |
| 3= | Serious Hazard  |
| 4= | Severe Hazard   |

**4. FIRST AID MEASURES**

**Eyes:**

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

**Skin:**

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

**Ingestion:**

Ingestion is unlikely as product is a gas at room temperature.

**Inhalation:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. 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 uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

**Medical Conditions Aggravated by Exposure:**

None known. .

**5. FIRE-FIGHTING MEASURES**

**Fire and Explosion Hazards:**

Nonflammable. Cylinders may rupture violently from pressure when involved in a fire situation.

**Extinguishing Media:**

Use extinguishing media suitable for the combustible materials involved in the fire. Use water spray to cool fire exposed containers.

**Fire Fighting Instructions:**

Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed cylinders until well after flames are extinguished.

**6. ACCIDENTAL RELEASE MEASURES**

Evacuate all personnel from affected area. Use appropriate protective equipment. 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 Maine Oxy / SpecAir location.



**7. HANDLING AND STORAGE**

**Electrical Classification:**

Nonhazardous.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure 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 away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). 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. Post —NO SMOKING “signs in use and storage areas. There should be no sources of ignition in areas where this product is being used or stored. Outside or detached storage is preferred.

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 area or attempt to remove stuck or jammed protective caps. Check for leaks and do not use leaky equipment. Do not use helium cylinder unless it 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. For additional recommendations consult Compressed Gas Association Pamphlet P-1 and Safety Bulletin SB-2.

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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**

**Engineering Controls:**

Use local exhaust to prevent accumulation of high concentrations and control air contaminants to at or below acceptable exposure guidelines. Maintain atmospheric oxygen at or above 19.5%.

**Eye/Face Protection:**

Safety goggles or glasses.

**Skin Protection:**

Protective work gloves or any suitable material.

**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.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

| <b>PARAMETER:</b>   | <b>VALUE:</b>             |
|---------------------|---------------------------|
| Physical state      | : Gas                     |
| Evaporation point   | : N/A                     |
| pH                  | : N/A                     |
| Odor and appearance | : Colorless, odorless gas |

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## 10. STABILITY AND REACTIVITY

**Stability:**

Stable

**Incompatible Materials:**

None

**Hazardous Decomposition Products:**

None

**Hazardous Polymerization:**

Will not occur.

## 11. TOXICOLOGICAL INFORMATION

**Skin & Eye:**

Not expected to cause skin or eye irritation

**Inhalation:**

Product is a simple asphyxiant. Maintain atmospheric oxygen at or above 19.5%. Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

## 12. ECOLOGICAL INFORMATION

No ecological damage is expected to be caused by this product.

## 13. DISPOSAL INFORMATION

Do not attempt to dispose of residual waste or unused quantities in returnable containers. Return in shipping container, properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to SpecAir for proper disposal. Non-refillable containers should be vented in a well-ventilated area then disposed of in compliance with local regulations, or returned to Maine Oxy / SpecAir.

## 14. TRANSPORT INFORMATION

|                               | <u>United States DOT</u>                      | <u>Canada TDG</u>                             |
|-------------------------------|---|---|
| <b>Proper Shipping Name:</b>  | Compressed Gas N.O.S.<br>(Helium, Compressed) | Compressed Gas N.O.S.<br>(Helium, Compressed) |
| <b>Hazard Class:</b>          | 2.2   | 2.2   |
| <b>Identification Number:</b> | UN1046  | UN1046  |
| <b>Shipping Label:</b>        | Non-Flammable Gas                             | Non-Flammable Gas                             |

## 15. REGULATORY INFORMATION

**SARA Title III Notifications and Information:**

**SARA Title III  $\alpha$  Hazard Classes:**

This product does not contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372.

**SARA Title III – Hazard Classes:**

Sudden Release of Pressure Hazard



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## 16. OTHER INFORMATION

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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/her (written) consent is a violation of transportation regulations.

**Disclaimer of Expressed and Implied Warranties:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

