



# MATERIAL SAFETY DATA SHEET

## PRODUCT INFORMATION

**PRODUCT:** Helium  
**TRADE NAME:** Helium  
**CHEMICAL NAME:** Helium  
**SYNONYMS:** Helium, compressed  
**FORMULA:** He  
**CHEMICAL FAMILY:** Inert gas or rare gas  
**MANUFACTURER'S NAME:** Air Liquide Canada Inc.  
**MANUFACTURER'S ADDRESS:** 1250 René-Lévesque Blvd. West Suite 1700  
 Montréal (Québec) Canada H3B 5E6  
**SUPPLIER'S NAME:** Air Liquide Canada Inc.  
**SUPPLIER'S ADDRESS:** 1250 René-Lévesque Blvd. West Suit 1700  
 Montréal (Québec) Canada H3B 5E6  
**EMERGENCY PHONE NUMBER:** (514) 878-1667  
**MOLECULAR WEIGHT:** 4.00  
**PRODUCT USE:** Various  
**PRODUCT IDENTIFICATION UN 1046, Helium, compressed  
 NUMBER:**

## HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
Helium	>97.5%	7440-59-7	None	None

MSDS for: Helium / FaxBack Doc. # : 1084

## PHYSICAL DATA

**PHYSICAL STATE:** Gas under pressure  
**APPEARANCE:** Colorless gas  
**ODOR:** Odorless  
**ODOR THRESHOLD:** Not applicable  
**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** See Vapor Density (air = 1)  
**VAPOR PRESSURE:** Not applicable (gas)  
**VAPOR DENSITY (air = 1):** 0.138  
**EVAPORATION RATE:** Not applicable (gas)  
**BOILING POINT:** -268.9°C  
**FREEZING POINT:** -269.7°C  
**pH:** Not applicable (gas)  
**GAS DENSITY:** 0.169 kg/m<sup>3</sup> @ 15°C, 101.3 kPa

COEFFICIENT OF WATER/OIL @ 15°C, Bunsen Coefficient = 0.0088  
DISTRIBUTION:

### FIRE OR EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY:	Nonflammable gas
MEANS OF EXTINCTION:	Nonflammable gas
FLASHPOINT AND METHOD OF DETERMINATION:	Nonflammable gas
UPPER EXPLOSION LIMIT (% BY VOL):	Nonflammable gas
LOWER EXPLOSION LIMIT (% BY VOL):	Nonflammable gas
AUTO-IGNITION TEMPERATURE:	Nonflammable gas
FLAMMABILITY CLASSIFICATION:	Nonflammable gas
HAZARDOUS COMBUSTION PRODUCTS:	Nonflammable gas
EXPLOSION DATA:	Nonflammable gas
SENSITIVITY TO STATIC DISCHARGE:	None

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### REACTIVITY DATA

CHEMICAL STABILITY: Stable  
INCOMPATIBLE MATERIALS: None  
CONDITIONS OF REACTIVITY: Non-reactive  
HAZARDOUS DECOMPOSITION PRODUCTS: None

### TOXICOLOGICAL PROPERTIES

**ROUTES OF ENTRY:**

**SKIN CONTACT:** None

**SKIN ABSORPTION:** None

**EYE:** None

**INHALATION:** Effects of exposure to high concentrations so as to displace the oxygen in the air necessary for life are headache, dizziness, labored breathing, eventual unconsciousness and death. Breathing mixtures of helium with adequate oxygen to support life modifies the voice sound so that it is higher "pitched".

DO NOT INHALE OR ALLOW ANYONE ELSE TO INHALE HELIUM FROM FILLING EQUIPMENT, BALLOONS OR THE CYLINDER. EVEN FOR A SHORT PERIOD OF TIME. INHALING HELIUM COULD RESULT IN DEATH OR SERIOUS PERSONAL INJURY.

**INGESTION:** None

**ACUTE OVER EXPOSURE EFFECTS:** Helium is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

**CHRONIC OVER EXPOSURE EFFECTS:** None

**EXPOSURE LIMITS:** Helium is defined as a simple asphyxiant. Oxygen levels should be maintained greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial at a pressure of 135 mm Hg. (ACGIH 1995-1996)

**IRRITANCY OF PRODUCT:** None

**SENSITIZATION TO MATERIAL:** None

**CARCINOGENICITY, REPRODUCTIVE EFFECTS:** None

**TERATOGENICITY, MUTAGENICITY:** None

**TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None

MSDS for: Helium / FaxBack Doc. # : 1084

## PREVENTIVE MEASURES

**PERSONAL PROTECTIVE EQUIPMENT:** Protective gloves. Safety goggles or glasses. Safety shoes.

**SPECIFIC ENGINEERING CONTROLS:** Helium is noncorrosive and may be used with any common structural material.

**LEAK AND SPILL PROCEDURES:** EVACUATE ALL PERSONNEL FROM AFFECTED AREA.

Use appropriate protective equipment. If leak is on container or container valve, contact the closest Air Liquide Canada location.

**WASTE DISPOSAL:** Do not attempt to dispose of 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 Air Liquide Canada for proper disposal. For emergency disposal, contact the closest Air Liquide Canada location.

**HANDLING PROCEDURES AND EQUIPMENT:** USE ONLY IN WELL-VENTILATED AREAS. Valve protection caps must remain in place unless container is secured with valve outlet piped to usage 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 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. Keep cylinder away from heat and flame. Do not tamper with (valve) safety device. Close valve after each use and when empty.

**STORAGE REQUIREMENTS:** 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 cylinders are stored to exceed 52°C. Cylinders must 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 being stored for excessive periods of time.

**TDG CLASSIFICATION:** 2.2

**WHMIS CLASSIFICATION:** A

**SPECIAL SHIPPING INFORMATION:** Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

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### FIRST AID MEASURES

**SPECIFIC FIRST AID PROCEDURES:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO HELIUM. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

**INHALATION:** 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 resuscitation and supplemental oxygen. Medical assistance should be sought immediately.

**EYE CONTACT:** Not applicable

**SKIN CONTACT:** Not applicable

MSDS for: Helium / FaxBack Doc. # : 1084

### PREPARATION INFORMATION

**PREPARED BY:** Safety Department

**DATE PREPARED:** 09/01/88

**LAST REVISION DATE:** 05/09/2002

**FOR INFORMATION OR MSDS, CONTACT YOUR LOCAL A.L.C. OFFICE OR DISTRIBUTOR.**

**MAIN ALC SALES LOCATIONS:**

Newfoundland	St.John's	Tel : 709 758-2765	Fax : 709 758-2800
Nova Scotia	Dartmouth	Tel : 902 468-5152	Fax : 902 468-5782
New Brunswick	Moncton	Tel : 506 857-3280	Fax : 506 857-9734
New Brunswick	Saint John	Tel : 506 634-8960	Fax : 506-646-1021
Quebec	Vanier	Tel : 418 683-1917	Fax : 418 683-7088
Montreal	Anjou	Tel : 514 356-7600	Fax : 514 351-0531

Toronto	Bramalea	Tel : 905 793-2000	Fax : 905 793-9257
Eastern Ontario	Oshawa	Tel : 905 576-1860	Fax : 905 571-3779
Lake Ontario	Burlington	Tel : 905 335-4877	Fax : 905 335-0301
South West Ontario	London	Tel : 519 455-3990	Fax : 519 455-3828
Northern Ontario	Sudbury	Tel : 705 674-7777	Fax : 705 674-0517
Manitoba & N.W. Ont.	Winnipeg	Tel : 204 989-9353	Fax : 204 779-1047
Saskatchewan	Saskatoon	Tel : 306 933-2722	Fax : 306 931-6641
Calgary	Calgary	Tel : 403 777-4700	Fax : 403 777-4727
Edmonton	Edmonton	Tel : 780 438-5600	Fax : 780 438-2801
Vancouver	Vancouver	Tel : 604 606-4300	Fax : 604 606-4246
Vancouver Island	Nanaimo	Tel : 250 758-1761	Fax : 250 758-1911
Okanagan	Kelowna	Tel : 250 769-4222	Fax : 250 769-7224

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