

PRODUCT NAME Helium	CAS # 7440-59-7
TRADE NAME AND SYNONYMS Helium	DOT I.D. No.: UN 1046
CHEMICAL NAME AND SYNONYMS Helium	DOT Hazard Class: Nonflammable gas
ISSUE DATE AND REVISIONS 25 November 1985	Formula: He Chemical Family: Inert gas

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT Helium is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg (ACGIH, 1985-86).
SYMPTOMS OF EXPOSURE Effects of exposure to high concentrations so as to displace the oxygen in the air necessary for life are headache, dizziness, labored breathing and eventual unconsciousness. Breathing mixtures of helium with adequate oxygen to support life modifies the voice sound so that it is higher "pitched."
TOXICOLOGICAL PROPERTIES 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.
RECOMMENDED FIRST AID TREATMENT 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 mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use.

Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

None

PHYSICAL DATA

BOILING POINT -452.1°F (-268.9°C)	LIQUID DENSITY AT BOILING POINT 7.8 lb/ft ³ (125 kg/m ³)
VAPOR PRESSURE @ 70°F (21.1°C) Above the critical temp. of -450.3°F (-268°C)	GAS DENSITY AT 70°F, 1 atm .0103 lb/ft ³ (.1650 kg/m ³)
SOLUBILITY IN WATER Negligible	FREEZING POINT λ point = -456.5°F (-271.3°C)
EVAPORATION RATE N/A	SPECIFIC GRAVITY (AIR=1) = 70°F (21.1°C) = .138
APPEARANCE AND ODOR Colorless, odorless gas	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) N/A	AUTO IGNITION TEMPERATURE N/A	FLAMMABLE LIMITS % BY VOLUME LEL N/A UEL N/A
EXTINGUISHING MEDIA Nonflammable, inert gas	ELECTRICAL CLASSIFICATION Nonhazardous	
SPECIAL FIRE FIGHTING PROCEDURES N/A		
UNUSUAL FIRE AND EXPLOSION HAZARDS N/A		

REACTIVITY DATA

STABILITY Unstable		CONDITIONS TO AVOID N/A
Stable	X	
INCOMPATIBILITY (Materials to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS None		
HAZARDOUS POLYMERIZATION May Occur		CONDITIONS TO AVOID N/A
Will Not Occur	X	

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

WASTE DISPOSAL METHOD 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 your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

RESPIRATORY PROTECTION (Specify type) Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.			
VENTILATION See Local Exhaust on last page.	LOCAL EXHAUST See last page.	SPECIAL	N/A
	MECHANICAL (Gen.) N/A	OTHER	N/A
PROTECTIVE GLOVES Any material			
EYE PROTECTION Safety goggles or glasses			
OTHER PROTECTIVE EQUIPMENT Safety shoes			

SPECIAL PRECAUTIONS*

SPECIAL LABELING INFORMATION	
DOT Shipping Name: Helium or Helium, Compressed	DOT Hazard Class: Nonflammable gas
DOT Shipping Label: Nonflammable gas	I.D. No.: UN 1046
SPECIAL HANDLING RECOMMENDATIONS	
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 reducing regulator when connecting cylinder to lower pressure (<3,000 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.	
For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14 and Safety Bulletin SB-2.	
SPECIAL STORAGE RECOMMENDATIONS	
Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130F (54C). 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 being stored for excessive periods of time.	
For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14 and Safety Bulletin SB-2.	
SPECIAL PACKAGING RECOMMENDATIONS	
Helium is noncorrosive and may be used with any common structural material.	
OTHER RECOMMENDATIONS OR PRECAUTIONS	
Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).	

*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which will not be reflected in this data sheet. The customer should review these regulations to ensure that he is in full compliance.

LOCAL EXHAUST: (Continued)

To prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 18 molar percent.