

Print MSDS Sheet

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SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MG INDUSTRIES
3 GREAT VALLEY PARKWAY
MALVERN, PENNSYLVANIA 19355
PHONE: 610-695-7400
FAX: 610-695-7596
SUBSTANCE: HELIUM
TRADE NAMES/SYNONYMS:
HELIUM GAS; HELIUM COMPRESSED; HELIUM-4; ATOMIC HELIUM; STCC 4904540; UN 1046;
HE; MGI10640; RTECS MH6520000
CHEMICAL FAMILY: inorganic, gas
CREATION DATE: May 04 1990
REVISION DATE: Sep 18 2001

EMERGENCY CONTACT:
CHEMTREC:
1-800-424-9300

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: HELIUM
CAS NUMBER: 7440-59-7
EC NUMBER (EINECS): 231-168-5
PERCENTAGE: 100.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: Odorless, colorless, tasteless, inert gas.

MAJOR HEALTH HAZARDS: difficulty breathing

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: nausea, vomiting, difficulty breathing, irregular
heartbeat, headache, fatigue, dizziness, disorientation, emotional
disturbances, tingling sensation, loss of coordination, suffocation,
convulsions, unconsciousness, coma, death

LONG TERM EXPOSURE: no information is available

SKIN CONTACT:

SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information is available

EYE CONTACT:

SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information is available

INGESTION:

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SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information is available

CARCINOGEN STATUS:

OSHA: No

NTP: No

IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give
artificial respiration if not breathing. If breathing is difficult, oxygen
should be administered by qualified personnel. Get immediate medical
attention.

SKIN CONTACT: Wash exposed skin with soap and water.

EYE CONTACT: Flush eyes with plenty of water.
INGESTION: If a large amount is swallowed, get medical attention.
NOTE TO PHYSICIAN: For inhalation, consider oxygen.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Containers may rupture or explode if exposed to heat.
EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical
Large fires: Use regular foam or flood with fine water spray.
FIRE FIGHTING: Move container from fire area if it can be done without risk.
Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

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Cylinder temperature should not exceed 125 F (52 C).
29 CFR Subpart "H"-Hazardous Materials.
National Fire Protection Association publication #55, "Standard for the Storage, Use and Handling of Compressed and Liquefied Gases in Portable Cylinders".
Compressed Gas Association publication P-1, "Safe Handling of Compressed Gases in Containers".
Store and handle in accordance with current regulations and standards:
OSHA 29 CFR 1910.101

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

HELIUM:

ACGIH (simple asphyxiant)
VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.
EYE PROTECTION: Eye protection not required, but recommended.
CLOTHING: Protective clothing is not required.
GLOVES: Protective gloves are not required.
RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Odorless, colorless, tasteless, inert gas.
MOLECULAR WEIGHT: 4.0026
MOLECULAR FORMULA: HE

BOILING POINT: -452 F (-269 C)
FREEZING POINT: -458 F (-272 C) @ 26 atm
VAPOR PRESSURE: 1719 mmHg @ -268 C
VAPOR DENSITY (air=1): 0.138
SPECIFIC GRAVITY: Not applicable
DENSITY: 0.1785 g/L @ 0 C
WATER SOLUBILITY: 0.94% @ 0 C
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable

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VISCOSITY: 0.02012 cP @ 26.8 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable
SOLVENT SOLUBILITY:
Insoluble: alcohol

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.
CONDITIONS TO AVOID: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
INCOMPATIBILITIES:
HELIUM:
No data available.
HAZARDOUS DECOMPOSITION:
Thermal decomposition products: miscellaneous decomposition products
POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

HEALTH EFFECTS:

INHALATION:

Do not breathe gas.

HELIUM: Inhalation of mixtures of helium and oxygen may cause distorted speech, increased loss of body heat, and gas emboli at the junction of skin and subcutaneous fat or body fat and blood vessels. See information on simple asphyxiants.

ACUTE EXPOSURE:

SIMPLE ASPHYXIANTS: The symptoms of asphyxia depend on the rapidity with which the oxygen deficiency develops and how long it continues. In sudden acute asphyxia, unconsciousness may be immediate. With slow development there may be rapid respiration and pulse, air hunger, dizziness, reduced awareness, tightness in the head, tingling sensations, incoordination, faulty judgement, emotional instability, and rapid fatigue. As the asphyxia progresses, nausea, vomiting, collapse, unconsciousness, convulsions, deep coma and death are possible.

CHRONIC EXPOSURE:

SIMPLE ASPHYXIANTS: No data available.

SKIN CONTACT:

ACUTE EXPOSURE:

HELIUM: No adverse effects have been reported from the gas. Due to rapid evaporation, the cryogenic liquid may cause frostbite with redness, tingling, and pain or numbness. In more severe cases, the skin may become hard and white and develop blisters.

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CHRONIC EXPOSURE:

HELIUM: No data available.

EYE CONTACT:

ACUTE EXPOSURE:

HELIUM: No adverse effects have been reported from the gas. Due to rapid

evaporation, the cryogenic liquid may cause frostbite with redness, pain, and blurred vision.

CHRONIC EXPOSURE:

HELIUM: No data available.

INGESTION:

ACUTE EXPOSURE:

HELIUM: Ingestion of a gas is unlikely. If swallowed, the cryogenic liquid may cause frostbite damage to the lips, mouth, and mucous membranes.

CHRONIC EXPOSURE:

HELIUM: No data available.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Helium, compressed

ID NUMBER: UN1046

HAZARD CLASS OR DIVISION: 2.2

LABELING REQUIREMENTS: Nonflammable gas

PACKAGING AUTHORIZATIONS:

EXCEPTIONS: 49 CFR 173.306

NON-BULK PACKAGING: 49 CFR 173.302

BULK PACKAGING: 49 CFR 173.302, 314

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: 75 kg

CARGO AIRCRAFT ONLY: 150 kg

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID:

SUBSTANCE NAME: Helium, compressed

UN NUMBER: UN1046

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ADR/RID CLASS: 2

ITEM NUMBER: 1(a)/1A

WARNING SIGN/LABEL: 2/2; 13

HAZARD ID NUMBER: 20

AIR TRANSPORT IATA/ICAO:

PROPER SHIPPING NAME: Helium, compressed

UN/ID NUMBER: UN1046

IATA/ICAO CLASS: 2.2

LABEL: Nonflammable gas

MARITIME TRANSPORT IMDG:

CORRECT TECHNICAL NAME: Helium, compressed

UN/ID NUMBER: UN1046

IMDG CLASS: 2(2.2)

EmS No.: 2-04

MFAG Table No.: none

IMDG CODE PAGE: 2144

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):

Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:

EC CLASSIFICATION (CALCULATED): Not determined.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

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TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

MSDS SUMMARY OF CHANGES

SECTION 3 HAZARDS IDENTIFICATION

SECTION 11 TOXICOLOGICAL INFORMATION

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