1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Helium, Compressed
CHEMICAL NAME: Helium
CHEMICAL FAMILY: Inert gas
SYNONYMS: Helium gas
CHEMICAL FORMULA: He
USE: Shield Gas, Inerting, Balloon Floatation, Electronic & medical Industry

NAME AND ADDRESS: **Refrigeration & Oxygen Co.**
Corporate Office
Area No 1, Block 21 C,
Central Slaughter House Street
Shuwaikh Industrial Area
Kuwait.

WEB ADDRESS: www.rockuwait.com; E-mail: info@rocq8.com
TELEPHONE: (+965) 844 844

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
CAUTION! High pressure gas.
Can cause rapid suffocation.
Do not breathe gas.
Self-contained breathing apparatus may be required by rescue workers.

POTENTIAL HEALTH EFFECTS INFORMATION:

ROUTES OF EXPOSURE:
INHALATION: Simple asphyxiant. Nontoxic, but may cause suffocation by displacing the oxygen in air. Exposure to oxygen-deficient atmosphere «19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8% to 10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.
EYE CONTACT: Not Applicable
SKIN CONTACT: Not Applicable
SKIN ABSORPTION: Not applicable
INGESTION: Not applicable
CHRONIC EFFECTS: None established
MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None
OTHER EFFECTS OF OVEREXPOSURE: None
CARCINOGENICITY: Not listed by NTP, OSHA, or IARC.

POTENTIAL ENVIRONMENTAL EFFECTS: No adverse ecological effects are expected.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME : Helium

PERCENTAGE >99%
CAS NUMBER 7440-59-1

4. FIRST AID MEASURES

FIRST AID PROCEDURES:
INHALATION: Persons suffering from lack of oxygen should be removed to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain prompt medical attention.

EYE CONTACT: Not Applicable
SKIN CONTACT: Not Applicable
INGESTION: Not applicable
NOTES TO PHYSICIAN: None

5. FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES: Nonflammable and does not support combustion.

EXTINGUISHING MEDIA: Use extinguishing media appropriate for the surrounding fire.

PROTECTION OF FIREFIGHTERS:
SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: Upon exposure to intense heat or flame cylinder may vent rapidly and/or rupture violently. Most cylinders are designed to vent contents when exposed to elevated temperatures. Pressure in a container can build up due to heat and it may rupture if pressure relief devices should fail to function.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS: Simple asphyxiant. If possible, remove cylinders from fire area or cool with water. Self-contained breathing apparatus may be required for rescue workers.

SENSITIVITY TO STATIC DISCHARGE: None
SENSITIVITY TO MECHANICAL IMPACT: None

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protection recommended in Section 8. Evacuate all personnel from the affected area. Ventilate area or remove cylinders to a well ventilated location. Self-contained breathing apparatus may be required for rescue workers.
ENVIRONMENTAL PRECAUTIONS: Not applicable.
METHODS FOR CONTAINMENT: Shut off source if possible without risk.
METHODS FOR CLEAN-UP: Not applicable.
OTHER INFORMATION: None.

7. HANDLING AND STORAGE

HANDLING: Use a suitable hand truck for cylinder movement. Never attempt to lift a cylinder by its valve protection cap. If user experiences any difficulty operating cylinder valve discontinue use

and contact supplier. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.

STORAGE: Store and use with adequate ventilation. Compressed gas cylinders shall be separated from materials and conditions that present exposure hazards to or from each other. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over. Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 125 °F (52°C). Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:
OSHA PEL-TWA: None NIOSH IDLH: None
ACGIH TLV: Simple asphyxiant

ENGINEERING CONTROLS:
VENTILATION: Natural or mechanical to prevent oxygen-deficient atmospheres below 19.5% oxygen.

PERSONAL PROTECTIVE EQUIPMENT:
EYE/FACE PROTECTION: Safety glasses are recommended.

SKIN PROTECTION: Work gloves are recommended when handling cylinders. Safety shoes are recommended when handling cylinders.

RESPIRATORY PROTECTION (SPECIFY TYPE):
General Use: None required
Emergency Use: Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere. Air purifying respirators will not function.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless
ODOR: Odorless, tasteless at normal temperature and pressure.
ODOR THRESHOLD: Not applicable
PHYSICAL STATE: Gaseous
pH: Not applicable

BOILING POINT: -452.1 °F (-268.9 °C) @ 1 atm
FLASH POINT: Not applicable
EVAPORATION RATE (Butyl Acetate=1): Gas, not applicable
FLAMMABILITY: Nonflammable gas
FLAMMABLE LIMITS IN AIR BY VOLUME:
LOWER: Not applicable UPPER: Not applicable

VAPOR PRESSURE (AT 20°C): Not applicable
GAS DENSITY: 0.0103 lbs/ft^3 (0.165 kg/m^3) @ 70 °F (21,1 °C) and 1 atm
SPECIFIC GRAVITY (Air=1): 0.135@ 70 °F (21.1 °C) and 1 atm
SOLUBILITY IN WATER: Vol./Vol. at 32 °F (0 °C): 0.0094
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
AUTOIGNITION: Nonflammable
DECOMPOSITION TEMPERATURE: Not applicable
MOLECULAR WEIGHT: 4.00
EXPANSION RATIO: Not applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable
CONDITIONS TO AVOID: None
INCOMPATIBLE MATERIALS: None
HAZARDOUS DECOMPOSITION PRODUCTS: None
POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur

11. TOXICOLOGICAL INFORMATION

The product is simple asphyxiant.
ACUTE DOSE EFFECTS: LD_{50}: None LCso: None
REPEATED DOSE EFFECTS: None established
IRRITATION: None
SENSITIZATION: None

GENETIC EFFECTS: None
DEVELOPMENTAL EFFECTS: None
TERATOGENICITY: None
SYNERGISTIC MATERIALS: None
REPRODUCTIVE EFFECTS: None
TARGET ORGAN EFFECTS: None
MUTAGENICITY: None

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No adverse ecological effects are expected. It does not contain any Class I or Class II ozone depleting chemicals. Not listed as a marine pollutant by DOT.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Contact your supplier.
For emergency disposal, discharge slowly to the atmosphere in a well ventilated area or outdoors.

14. TRANSPORT INFORMATION

BASIC SHIPPING DESCRIPTION:
PROPER SHIPPING NAME: Helium, Compressed
HAZARD CLASS: 2.2 (Nonflammable Gas)
IDENTIFICATION NUMBER: UN 1046
ADDITIONAL INFORMATION:
PRODUCT RQ: Not applicable
SHIPPING LABEL(s): Nonflammable gas
PLACARD (When required): Nonflammable gas
SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well ventilated vehicle. The transportation of compressed gas containers in automobiles or in closed-body vehicles can present serious safety hazards and should be discouraged.

15. REGULATORY INFORMATION & OTHER INFORMATION

SPECIAL PRECAUTIONS: Use piping and equipment adequately designed to withstand pressures to be encountered. Use a check valve or other protective apparatus in any line or piping from the cylinder to prevent reverse flow. Cross contamination of gases, liquids, or both can also create a hazardous condition inside a cylinder, dewar, or vessel (e.g., flammable and oxidizing gases can create an explosive mixture), which may result in rupture.

Shipment of compressed gas cylinders that have not been filled with the owner's consent is a violation of federal law (49 CFR Part 173.301 (b)).

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties that can cause serious injury or death.

HAZARD RATINGS AND RATING SYSTEMS:

NFPA RATINGS:

HEALTH =0; FLAMMABILITY =0; INSTABILITY: =0; SPECIAL: SA

STANDARD VALVE CONNECTIONS:

THREADED:		
0-3000 psig	CGA 580	
3001-5500 psig	CGA 680	
5501-7500 psig	CGA 677	
PIN-INDEXED YOKE:	Not applicable	
ULTRA HIGH INTEGRITY:	0-3000 psig	718

Use the proper connections; DO NOT USE ADAPTERS. DO NOT FORCE FIT

The information and recommendations in this Material Safety Data

Sheet relate only to the specific material mentioned herein and do not relate to use otherwise ie., in combination with any other material or in any process.

The information and recommendations herein are taken from our extensive experiences and the data contained in recognized references and believed by us to be accurate. Refrigeration group of companies make no warranties either expressed or implied with respect there to and assume no liability in connection with the use of such information and recommendation.