

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Nitrogen, Compressed  
**CHEMICAL NAME:** Nitrogen  
**CHEMICAL FAMILY:** Inert gas  
**SYNONYMS:** Nitrogen gas  
**CHEMICAL FORMULA:** N<sub>2</sub>  
**USE:** Shield Gas, Inerting, Instrumentation & 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](http://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 : Nitrogen

PERCENTAGE >99%  
CAS NUMBER 7727-37-9

#### 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

MELTING POINT: -345.8 of (-209.9 0c) @ 1 atm

BOILING POINT: -320.4 of (-195°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 DC): Not applicable

GAS DENSITY: 0.072 lbs/ft<sup>3</sup> (1.153 kg/m<sup>3</sup>) @ 70 of (21.1 °C) and 1 atm

SPECIFIC GRAVITY (Air =1): 0.967 @ 70 of (21.1 DC) and 1 atm

SOLUBILITY IN WATER: Vol/Vol at 32 of (0 °C): 0.023

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

AUTOIGNITION: Nonflammable

DECOMPOSITION TEMPERATURE: Not applicable

MOLECULAR WEIGHT: 28.01

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<sub>50</sub>: None

LC<sub>50</sub>: 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: Nitrogen, Compressed

HAZARD CLASS: 2.2 (Nonflammable Gas)

IDENTIFICATION NUMBER: UN 1066

**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.

MATERIAL SAFETY DATA SHEET - "NITROGEN- COMPRESSED"

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.

