

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Air, compressed
CHEMICAL NAME: Air
CHEMICAL FAMILY: Nonflammable gas
SYNONYMS: Medical Air, Breathing Air, Compressed Air
CHEMICAL FORMULA: NA
USE: Breathing purpose, Cutting & Welding, for accelerating combustion and various other uses.

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

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! High pressure gas
May accelerate combustion.

POTENTIAL HEALTH EFFECTS INFORMATION:

ROUTES OF EXPOSURE:

INHALATION: At atmospheric pressure air has no adverse health effects.

EYE CONTACT: Not Applicable.

SKIN CONTACT: Not Applicable

SKIN ADSORPTION: Not applicable

INGESTION: Not Applicable.

CHRONIC EFFECTS: None established

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None

OTHER EFFECTS OF OVEREXPOSURE: None.

CARCINOGENICITY: Air is not listed by NTP, OSHA, or IARC.

POTENTIAL ENVIRONMENTAL EFFECTS: No adverse ecological effects are expected.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME Air
PERCENTAGE 100%
CAS NUMBER 132259-10-0

4. FIRST AID MEASURES

FIRST AID PROCEDURES:

INHALATION: Not Applicable.

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EYE CONTACT: None.

SKIN CONTACT: None.

INGESTION: None.

NOTES TO PHYSICIAN: Not Applicable

5. FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES: Nonflammable; will support combustion..

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

PROTECTION OF FIREFIGHTERS:

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: Compressed air at high pressures may accelerate combustion of other materials. Upon exposure to intense heat or flame, cylinder will 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: Evacuate all personnel from the danger area. If possible, shut off flow of air that is supporting the fire. Immediately cool containers with water spray from maximum distance. When cool, move containers from fire area, if without risk.

SENSITIVITY TO STATIC DISCHARGE: None.

SENSITIVITY TO MECHANICAL IMPACT: None.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protection recommended in Section 8.

ENVIRONMENTAL PRECAUTIONS: Not applicable.

METHODS FOR CONTAINMENT: Shut off source of air, if possible. If leak is from cylinder or its valve, contact your supplier.

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. Keep cylinders and their valves free from oil and grease. Open valve slowly. If user experiences 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. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Use an adjustable strap wrench to remove over-tight or rusted caps.

STORAGE: 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

OSHA PEL-TWA: None ACGIH TLV: None
 NIOSH IDLH: None

ENGINEERING CONTROLS:
VENTILATION: None required

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Safety glasses are recommended when handling cylinders.

SKIN PROTECTION: Work gloves are recommended when handling cylinders. Gloves must be clean and free of oil and grease. Safety shoes are recommended when handling cylinders.

RESPIRATORY PROTECTION:

General Use: None required

Emergency Use: None required.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless.

ODOR: Odorless gas. Tasteless at normal temperature and pressure.

ODOR THRESHOLD: Not applicable

PHYSICAL STATE: Gaseous.

pH: Not applicable

FREEZING POINT/MELTING POINT: -357.2 °F (-216.2 °C) @ 1 atm

BOILING POINT (1 atm): -317.8 °F (-194.3 °C)

FLASH POINT: Not applicable

EVAPORATION RATE (Butyl Acetate=1): 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 at 70 °F (21.1 °C) and 1 atm: 0.07493lb/ft³ (1.2 kg/m³)

SPECIFIC GRAVITY (Air=1): 1.0 @ 70 °F (21.1 °C) and 1 atm

SOLUBILITY IN WATER: Vol/Vol at 32 °F (0°C):0.0292

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

AUTOIGNITION: Non Applicable

DECOMPOSITION TEMPERATURE: Non Applicable

MOLECULAR WEIGHT: 28.975

EXPANSION RATIO Non Applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable **CONDITIONS TO AVOID:** None

INCOMPATIBLE MATERIALS: None.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

POSSIBILITY OF HAZARDOUS REACTIONS: Not applicable

11. TOXICOLOGICAL INFORMATION

Air is nontoxic and is necessary to support life. Inhalation of air in high pressure environments can result in symptoms similar to overexposure to oxygen. These include tingling of fingers, impaired coordination, and confusion. Decompression sickness (Bends) is possible following rapid decompression. Decompression equipment may be required if exposed to high pressure environment.

ACUTE DOSE EFFECTS:

LD₅₀: None

LC₅₀: None

REPEATED DOSE EFFECTS: None established

IRRITATION: None SENSITIZATION: None

GENETIC EFFECTS: None REPRODUCTIVE EFFECTS: None

DEVELOPMENTAL EFFECTS: None TARGET ORGAN EFFECTS: None

MUTAGENICITY: None

TERATOGENICITY: None

SYNERGISTIC MATERIALS: None

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No adverse ecological effects are expected. Air does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82). Air is not listed as a marine pollutant by DOT (49 CFR Part 171).

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier. For emergency disposal, secure the cylinder and slowly discharge gas to the atmosphere.

14. TRANSPORT INFORMATION

BASIC SHIPPING DESCRIPTION:

PROPER SHIPPING NAME: Air Compressed

HAZARD CLASS: 2.2 (Nonflammable gas)

IDENTIFICATION NUMBER: UN 1002

PIN: 1002

ADDITIONAL INFORMATION:

PRODUCT RQ: None

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 cylinders 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.

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 (NFPA RATING):

Atmospheric air that is compressed is composed of the following gases:

Nitrogen:	78%
Oxygen	21%
Argon	0.9%

Compressed air is also synthetically produced by mixing 79% nitrogen and 21 % oxygen.

HEALTH	= 0
FLAMMABILITY	= 0
INSTABILITY	= 0
SPECIAL	= None

STANDARD VALVE CONNECTIONS

THREADED:	0-3000 psig	CGA 346
	3001 to 5500 psig	CGA 347
	5501 to 7500 psig	CGA 702
PIN-INDEXED YOKE:	0-3000 psig	CGA 950 (Medical Use)
ULTRA HIGH INTEGRITY:	NA	

Use the proper connections; DO NOT USE ADAPTERS

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.