

Safety Data Sheet

Part Number 325363

Section 1. Substance Identity and Company Contact Information

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| Product Name | R-22 | Product Part Number(s) | 01-R22GAS Calibration Kit 01-R22KIT |
| Trade Name | R-22 | Unit Size | 103 liters/3.6 cubic ft. @ 1,000 psig |
| Company | OI Analytical, P.O. Box 9010, College Station, TX 77842-9010, Phone: (979) 690-1711, Fax: (979) 690-0440 | | |

Emergency No. 1-800-424-9300 (Chemtrec). Use only in the event of chemical emergencies involving spills, leaks, fire, exposure, or accidents involving chemicals.

Section 2. Hazards Identification

Pictogram(s)



Signal Word

Warning

Hazard Statement(s)

Contains gas under pressure; may explode if heated

Precautionary Statement(s)

Colorless, odorless, nonflammable gas. This product contains sufficient oxygen to support life. Chlorofluorocarbons can cause irritation, central nervous system depression and irregular heart beat at high concentrations. Nonflammable but decomposes to toxic gases, including phosgene, under fire conditions. Use only with adequate ventilation. Contents under pressure. Use and store below 125 °F (52 °C).

Target Organ(s)

Skin

Potential Health Effects

Eye: Contact with rapidly expanding gas near the point of release may cause frostbite.

Skin: Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

Ingestion: None known. Ingestion is unlikely as product is a gas at room temperature.

Inhalation: Gas mixture contains sufficient oxygen to support life (at least 98% air is present). Chlorodifluoromethane acts as a simple asphyxiant, but is not present at high enough concentrations to exclude oxygen.

Chronic Effects/Carcinogenicity

IARC: No
NTP: No
OSHA: No

Teratology (Birth Defects) Information

No

Reproductive Information

No

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| NFPA Ratings | Health: | 1 |
| | Flammability: | 0 |
| | Reactivity: | 0 |
| | Special Notice Key: | No data available |
| HMIS Rating | Health: | 1 |
| | Flammability: | 0 |
| | Reactivity: | 0 |
| | Protective Equipment: | Wear appropriate PPE |

Section 3. Chemical Composition and Data on Components

| Ingredient | CAS No. | Percent | Hazard Data | |
|-----------------------|-------------------|---------------|-------------------|-------------------|
| | | | ACGIH TLV | OSHA PEL |
| Chlorodifluoromethane | 75-45-6 | 0.0002 to 2.0 | 1000 ppm TWA | No data available |
| Air | No data available | 98 to 99.9998 | No data available | No data available |

Section 4. First Aid Measures

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| General Advice | No data available |
| If Inhaled | PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Victims 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, and if breathing has stopped, administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive. |
| In Case of Skin Contact | None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention. |
| In Case of Eye Contact | None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention. |
| If Swallowed | None required. Product is a gas at normal temperatures and conditions. |
| Indication of Any Immediate Medical Attention and Special Treatment Needed | Provide general supportive measures and treat symptomatically. |

Section 5. Fire-fighting Measures

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| General Information | Nonflammable. May decompose yielding toxic products, which may include phosgene, hydrochloric and hydrofluoric acids. Cylinder may rupture violently from pressure when involved in a fire situation. |
| Suitable Extinguishing Media | None required. Use as appropriate for surrounding materials. |
| Special Hazards Arising from the Substance or mixture | None known. |
| Advice for Firefighters | If possible, stop the flow of gas supply. Use water spray to cool adjacent cylinders and areas. Fire fighters should wear a full-face piece NIOSH/MSHA approved self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear. |
| Flash Point | No data available |
| Autoignition Temperature | None known. |
| Further Information | No data available |

Section 6. Accidental Release Measures

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| Personal Precautions, Protective Equipment, and Emergency Procedures | Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or valve, contact the appropriate emergency telephone number listed in Section 1. |
| Environmental Precautions | No data available |
| Methods and Materials for Containment and Cleaning | No data available |
| Reference to Other Sections | For disposal, see Section 13. |

Section 7. Handling and Storage

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| Precautions for Safe Handling | Non-hazardous Gas mixture is non-corrosive and may be used with any common structural material. Use only in well-ventilated areas. Valve protection caps must remain in place unless the cylinder 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 regulator when connecting cylinder to lower pressure (<3000 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 backflow into the cylinder. |
| Conditions for Safe Storage, Including any Incompatibilities | Protect cylinders from physical damage. Store in cool, dry, well ventilated area of non-combustible construction away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 °F (52 °C). 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 from being stored for excessive periods of time. Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid from in |
| Specific End Use(s) | Analytical chemistry |

Section 8. Exposure Controls and Personal Protection

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| Components with Workplace Control Parameters | Use only in a chemical fume hood. |
| Appropriate Engineering Controls | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. |
| Eye/Face Protection | Wear chemical goggles. |
| Skin Protection | Wear chemical goggles. |
| Body Protection | Wear suitable protective clothing. Wear protective gloves. |
| Respiratory Protection | In case of insufficient ventilation, wear suitable respiratory equipment. Thermal hazards Not available. General hygiene considerations. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks |
| Control of Environmental Exposure | No data available |

Section 9. Physical and Chemical Properties

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| Appearance | Form: Gas; Color: Colorless |
| Odor | Odorless |
| Odor Threshold | No data available |
| pH | No data available |
| Melting Point/Freezing Point | No data available |
| Initial Boiling Point and Boiling Range | No data available |
| Flash Point | No data available |
| Evaporation Rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/Lower Flammability or Explosive Limits | No data available |
| Vapor Pressure | No data available |
| Vapor Density | No data available |
| Relative Density | No data available |
| Water Solubility | Negligible |
| Partition Coefficient : n-octanol/water | No data available |
| Auto-ignition Temperature | No data available |
| Decomposition Temperature | No data available |
| Viscosity | No data available |
| Explosive Properties | No data available |
| Oxidizing Properties | No data available |
| Other Safety Information | No data available |

Section 10. Stability and Reactivity

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| Reactivity | No data available |
| Chemical Stability | Stable |
| Possibility of Hazardous Reactions | Chlorodifluoromethane decomposes at fire temperatures to hydrochloric and hydrofluoric acids, carbonyl fluoride and phosgene. |
| Conditions to Avoid | None known. |
| Incompatible Materials | Chlorodifluoromethane may react violently with chemically active metals such as sodium, potassium, barium, powdered magnesium, powdered aluminum and organometallics. |

Section 11. Toxicological Information

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| Routes of Exposure | <i>On the skin:</i> No <i>On the eye:</i> No <i>Inhalation:</i> Yes <i>Ingestion:</i> No |
| Respiratory or Skin Sensitization | Irritating to the skin |
| Signs and Symptoms of Overexposure | Irritant effects. |
| Toxicity Data | <i>Reproductive/Mutagenic: Exposure of male rats to 50,000 ppm Chlorodifluoromethane for 5 hours adversely affected the reproductive system. Mutations were produced in a bacterial (S. Typhimurium) assay system at 330,000 ppm.</i> |

Section 12. Ecological Information

General Notes The gas will be dissipated rapidly in well-ventilated areas. Chlorodifluoromethane is a chlorofluorocarbon (CFC) compound. Chlorofluorocarbon compounds have been implicated in the possible depletion of the stratospheric ozone, via a series of complex chemical reactions which occur in the upper atmosphere. Atmospheric ozone is essential in protecting plants and animals from potentially harmful ultraviolet-light exposures. All work practice must be directed at eliminating environmental contamination.

No evidence is currently available on this product's effects on plant and animal life.

No evidence is currently available on this product's effects on aquatic life.

Section 13. Disposal Considerations

Product Do not attempt to dispose of waste or unused quantities in returnable cylinders. Return in the shipping container, properly labeled, with any valve outlet plugs or caps secure and valve protection cap in place for proper disposal.

Contaminated Packaging Non-refillable containers should be vented in a well-ventilated area then disposed of in accordance with local regulations.

Section 14. Transport Information

DOT Shipping Name Compressed gases, N.O.S., (Chlorodifluoromethane, Nitrogen)

UN Proper Shipping Name Compressed gases, N.O.S., (Chlorodifluoromethane, Nitrogen)

DOT Hazard Class 2.2

Packing Group No information available

UN Number UN1956

Hazardous Ingredients No data available

DOT Label Non-flammable gas

DOT Placard No data available

IMDG Shipping Name No information available

UN Number UN1956

Class No information available

Packing Group No information available

IATA Shipping Name No information available

Technical Shipping Name No information available

IATA Hazard Class No information available

UN Number UN1956

Hazardous Ingredients No information available

IATA Label No information available

IATA Placard No data available

Section 15. Regulatory Information

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| OSHA Status | No data available |
| TSCA Status | Yes |
| CERCLA Reportable Quantity | No data available |
| SARA Title III | Chlorodifluoromethane is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know act (EPCRA) of 1986 and of 40 CFR 372. Acute Health Hazard Sudden Release of Pressure Hazard Chlorodifluoromethane is subject to the reporting requirements under Title VI of the Clean Air Act Amendments of 1990: "Stratospheric Ozone Protection". Chlorodifluoromethane is listed as a Class II ozone-depleting chemical. This product may be required to bear the following label: Warning: Contains Chlorodifluoromethane, a substance which harms public health and environment by destroying ozone in the upper atmosphere. |
| RCRA Status | No data available |
| California Proposition 65 | No data available |
| Chemical Weapons Convention | No data available |
| TSCA 12 (b) | No data available |
| SARA 311/312 | Acute: Yes Chronic: No Fire: No Pressure: Yes Reactivity: No |
| Australian Hazchem Code | No data available |
| Poison Schedule | No data available |
| WHMIS | This SDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR. |

Section 16. Other Information

Date Prepared: April 14, 2004
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For R&D use only. Not for drug, household, or other uses.

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151 Graham Road
PO Box 9010
College Station, Texas
77842-9010

(979) 690-1711
(800) 653-1711 USA/Canada
FAX (979) 690-0440

www.oico.com
E-mail: OI-Mail@XylemInc.com