



# Material Safety Data Sheet

## R-403B

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** R-403B  
**DISTRIBUTOR:** National Refrigerants, Inc.  
661 Kenyon Avenue  
Bridgeton, New Jersey 08302

**FOR MORE INFORMATION CALL:**  
(Monday-Friday, 8:00am-5:00pm)  
1-800-262-0012

**IN CASE OF EMERGENCY CALL:**  
CHEMTREC: 1-800-424-9300

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Chlorodifluoromethane	75-45-6	55
Perfluoropropane	76-19-7	39
Propane	74-98-6	6

Trace impurities and additional material names not listed above may also appear in Section 15 toward the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

### 3. HAZARDS IDENTIFICATION

#### POTENTIAL HEALTH HAZARDS

Inhaling high concentrations of vapor is harmful and may cause light-headedness, shortness of breath, heart irregularities, unconsciousness or death. Vapor is heavier than air and may reduce oxygen available for breathing.

Intentional misuse can be fatal.

Human health effects from overexposure by inhalation, ingestion, or skin or eye contact may initially include: temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination and loss of consciousness. Higher exposures may lead to temporary alteration of the heart's electrical activity with irregular pulse, palpitations or inadequate circulation. Gross overexposure may be fatal. Skin contact with liquid may cause frostbite.

Individuals with preexisting diseases of the central nervous system or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

Inhalation 4 hr. LC50: Not established for mixture  
Oral LD50: Not established for mixture

# NATIONAL REFRIGERANTS™

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## **CARCINOGENICITY**

Not listed as a carcinogen by IARC, NTP, OSHA or ACGIH.

## **EXPOSURE LIMITS**

PEL (OSHA): 1000 ppm for chlorodifluoromethane and propane  
TLV (ACGIH): 1000 ppm for chlorodifluoromethane, 2500 ppm for propane  
Perfluoropropane: Not Available

## **SAFETY PRECAUTIONS**

Avoid breathing vapors and prolonged skin exposure. Use with sufficient ventilation to keep exposure below recommended limits.

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## **4. FIRST AID MEASURES**

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**SKIN:** Promptly flush skin with plenty of water. Get medical attention if symptoms persist.

**EYES:** Immediately flush eyes with large amounts of water. Get medical attention if symptoms persist.

**INHALATION:** Immediately remove to fresh air; keep calm. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention. Do not give epinephrine (adrenaline).

**INGESTION:** Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting. Call a physician.

**ADVICE TO PHYSICIAN:** Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support.

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## **5. FIRE FIGHTING MEASURES**

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### **FLAMMABLE PROPERTIES**

<b>FLASH POINT:</b>	Gas, not applicable per DOT regulations
<b>AUTOIGNITION TEMPERATURE:</b>	Not determined
<b>UPPER FLAME LIMIT (volume % in air):</b>	Not determined
<b>LOWER FLAME LIMIT (volume % in air):</b>	Not determined
<b>AUTODECOMPOSITION TEMPERATURE:</b>	Not determined
<b>OSHA FLAMMABILITY CLASS:</b>	Not applicable

### **EXTINGUISHING MEDIA:**

Use extinguishing media as appropriate for combustibles

### **UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Use water spray or fog to cool containers. Cylinders may rupture under fire conditions. Decomposition may occur.

### **SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:**

Self-contained breathing apparatus (SCBA) is required if cylinders rupture and contents are released under fire conditions.

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## 6. ACCIDENTAL RELEASE MEASURES

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### IN CASE OF SPILL OR OTHER RELEASE:

Ventilate area. Use self-contained breathing apparatus (SCBA) in case of large spills. Comply with Federal, State and local regulations on reporting releases.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

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## 7. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### GENERAL CONTROL MEASURES:

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical (general) ventilation should be used in low places.

### PERSONAL PROTECTIVE EQUIPMENT

Butyl gloves should be worn to avoid prolonged or repeated exposure. Chemical splash goggles should be worn as needed to prevent eye contact. Under normal use, no respiratory protection is required when using this chemical. Self-contained breathing apparatus (SCBA) is required if a large spill or release occurs.

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## 8. PHYSICAL AND CHEMICAL PROPERTIES

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<b>APPEARANCE:</b>	Clear, colorless liquid and vapor
<b>PHYSICAL STATE:</b>	Gas at ambient temperatures
<b>CHEMICAL FORMULA:</b>	CHClF <sub>2</sub> , C <sub>3</sub> F <sub>8</sub> , C <sub>3</sub> H <sub>8</sub>
<b>ODOR:</b>	Slight ethereal
<b>SOLUBILITY IN WATER (weight %):</b>	0.3% wt. @ 77°F (25°C)
<b>pH:</b>	Neutral
<b>BOILING POINT:</b>	-57.1°F (-46.5°C)
<b>VAPOR PRESSURE:</b>	191.2 psia @ 77°F (25°C)
<b>VAPOR DENSITY (air = 1.0):</b>	2.7593 lb/ft <sup>3</sup> @ 77°F (25°C)
<b>EVAPORATION RATE:</b>	>1 <b>COMPARED TO:</b> CCl <sub>4</sub> = 1
<b>% VOLATILES:</b>	100
<b>LIQUID DENSITY:</b>	71.79 lb/ft <sup>3</sup> @ 77°F (25°C)
<b>FLASH POINT:</b>	Not applicable

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## 9. STABILITY AND REACTIVITY

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### NORMALLY STABLE? (CONDITIONS TO AVOID):

The material is stable.  
Avoid open flames and high temperatures.

### DECOMPOSITION

This material may decompose if exposed to high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possible carbonyl halides.



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**INCOMPATIBILITIES:**

Alkali or alkaline earth metals (powdered Al, Zn, Be, etc)

**POLYMERIZATION:**

Will not occur.

**10. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:** Comply with Federal, State and local regulations. Do not vent to atmosphere.

**11. ENVIRONMENTAL INFORMATION**

**PRODUCT WARNING LABEL**

WARNING: Contains HCFC 22, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

**OZONE DEPLETING POTENTIAL**

0.05

**12. TRANSPORT INFORMATION**

**US DOT PROPER SHIPPING NAME:** Refrigerant Gases, N.O.S. (Chlorodifluoromethane, Perfluoropropane, and Propane)  
**US DOT HAZARD CLASS:** 2.2  
**US DOT PACKING GROUP:** Not applicable  
**US DOT ID NUMBER:** UN1078  
**DOT PLACARD:** NON-FLAMMABLE GAS

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

**13. REGULATORY INFORMATION**

**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

**TSCA INVENTORY STATUS:** Reported/Included

**OTHER TSCA ISSUES:** None

**SARA TITLE III / CERCLA**

“Reportable Quantities” (RQs) and/or “Threshold Planning Quantities” (TPQs) exist for the following ingredients.

**INGREDIENT NAME**

**SARA / CERCLA RQ (lb.)**

**SARA EHS TPQ (lb.)**

No ingredients listed in this section

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

# NATIONAL REFRIGERANTS™

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**SECTION 311 HAZARD CLASS:** IMMEDIATE  
PRESSURE

**SARA 313 TOXIC CHEMICALS:**

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>CAS. NO.</u>	<u>WT%</u>
Chlorodifluoromethane	75-45-6	55%

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## 14. OTHER INFORMATION

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**CURRENT ISSUE DATE:** December, 2008

**PREVIOUS ISSUE DATE:** August, 2007

**OTHER INFORMATION:** HMIS Classification: Health – 1, Flammability – 0, Reactivity – 1  
NFPA Classification: Health – 1, Flammability – 0, Reactivity – 1

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## 15. DISCLAIMER

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