



# Material Safety Data Sheet

## R-116

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** R-116  
**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>
Hexafluoroethane	76-16-4	100

### 3. HAZARDS IDENTIFICATION

#### POTENTIAL HEALTH HAZARDS

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse of deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite.

#### HUMAN HEALTH EFFECTS

Skin contact with the liquid can cause frostbite. Prolonged skin contact may cause temporary tingling, numbness, coldness, or drying of skin. Eye contact with the liquid may initially include mild eye irritation with discomfort, tearing, or blurring of vision.

Inhalation may include nonspecific discomfort such as nausea, headache, or weakness. Inhalations of high concentrations may include temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation.

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

#### CARCINOGENICITY INFORMATION

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.



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#### **4. FIRST AID MEASURES**

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**INHALATION:** Immediately remove to fresh air. Keep person calm. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**SKIN:** Flush skin with water for at least 15 minutes. Treat for frostbite if necessary by gently warming the affected area. Get medical attention if irritation is present.

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**INGESTION:** Ingestion is not considered a potential route of exposure.

**ADVICE TO PHYSICIAN:** Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should only 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>	Will not burn
<b>FLASH POINT METHOD:</b>	TOC
<b>AUTOIGNITION TEMPERATURE:</b>	>870°C (>1598°F)
<b>UPPER FLAME LIMIT (volume % in air):</b>	Not applicable
<b>LOWER FLAME LIMIT (volume % in air):</b>	Not applicable
<b>AUTODECOMPOSITION:</b>	Not determined

##### **EXTINGUISHING MEDIA:**

As appropriate for combustibles in area.

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

Cylinders are equipped with pressure and temperature relief devices, but still may rupture under fire conditions. Decomposition may occur.

##### **FIRE FIGHTING INSTRUCTIONS:**

Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or release under fire conditions.

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#### **6. ACCIDENTAL RELEASE MEASURES**

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##### **SAFEGUARDS (Personnel):**

**NOTE:** Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

##### **ACCIDENTAL RELEASE MEASURES:**

Ventilate area, especially low or enclosed places where heavy vapors might collect. Remove open flames. Wear self-contained breathing apparatus (SCBA) for large spills or when a release occurs.

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## 7. HANDLING AND STORAGE

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### HANDLING (Personnel):

Avoid breathing high concentrations of vapor. Avoid contact of skin or eyes with liquid or cold vapors. Use with sufficient ventilation to keep employee exposure below recommended limits.

### STORAGE RECOMMENDATIONS:

Store containers in a clean, dry area. Do not heat above 52°C (125°F)

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### ENGINEERING CONTROLS:

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

### PERSONAL PROTECTIVE EQUIPMENT

Impervious gloves and chemical splash goggles should be worn when handling liquid. Under normal conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a spill occurs.

### EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Hexafluoroethane	Not Established	Not Established

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>APPEARANCE:</b>	Clear, colorless
<b>PHYSICAL STATE:</b>	Liquefied gas
<b>ODOR:</b>	Slight ethereal
<b>BOILING POINT:</b>	-78.3°C (-108.9°F)
<b>VAPOR PRESSURE:</b>	439 psia @ 19.7°C (67.5°F)
<b>VAPOR DENSITY (air = 1.0):</b>	4.8
<b>% VOLATILES:</b>	100

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## 10. STABILITY AND REACTIVITY

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

The product is stable. However, avoid open flames and high temperatures.

### INCOMPATIBILITIES:

Incompatible with alkali or alkaline earth metals – powdered Al, Zn, Be, etc.

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## **DECOMPOSITION:**

Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

## **POLYMERIZATION:**

Will not occur.

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## **11. TOXICOLOGICAL INFORMATION**

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### **ANIMAL DATA:**

Inhalation 4 hr. ALC: >800,000 ppm in rats

The compound is untested for skin or eye irritancy, and is untested for animal sensitization.

Effects observed in animals by inhalation include decreased growth rate, pulmonary changes, irregular respiration, increased urine volume and creatinine, reversible pathological changes in the kidneys, and increased urinary fluoride concentration. One study showed no arrhythmogenic effects in dogs at a concentration of 20% R-116, while another study did show some arrhythmogenic effects in both guinea pigs and dogs. Long-term inhalation exposures resulted in an initial decrease in growth rate, but no other adverse changes were noted. No animal test reports are available to define carcinogenic, developmental, or reproductive hazards. The compound does not produce genetic damage in bacterial cell cultures but has not been tested in animals.

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## **12. DISPOSAL CONSIDERATIONS**

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### **WASTE DISPOSAL:**

Disposal must comply with federal, state, and local regulations. Reclaim by distillation or remove to a permitted waste disposal facility.

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## **13. TRANSPORT INFORMATION**

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**DOT/IMO/IATA:** US DOT PROPER SHIPPING NAME: Hexafluoroethane  
US DOT HAZARD CLASS: 2.2  
SHIPPING LABEL: Nonflammable Gas

**US DOT ID NUMBER:** UN2193

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## **14. REGULATORY INFORMATION**

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### **U.S. FEDERAL REGULATIONS**

**TSCA INVENTORY STATUS:** Reported/ Included

### **TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312**

Acute : Yes  
Chronic : No  
Fire : No  
Reactivity: No  
Pressure : Yes



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**HAZARDOUS CHEMICAL LISTS:**

SARA Extremely Hazardous Substance - No  
CERLCA Hazardous Substance - No  
SARA Toxic Chemical - No

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**15. OTHER INFORMATION**

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**CURRENT ISSUE DATE:** December, 2008  
**PREVIOUS ISSUE DATE:** August, 2007

**NFPA, NPCA-HMIS:**

NPCA-HMIS Classification: Health – 1, Flammability – 0, Reactivity – 1

Personal Protection rating to be supplied by user depending on use conditions.

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**16. DISCLAIMER**

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