



# Safety Data Sheet

## R-116

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**PRODUCT NAME:** R-116  
**OTHER NAME:** Hexafluoroethane  
**USE:** Refrigerant Gas  
**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

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### 2. HAZARDS IDENTIFICATION

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<b>CLASSIFICATION:</b>	Gases under pressure, Liquefied Gas
<b>SIGNAL WORD:</b>	WARNING
<b>HAZARD STATEMENT:</b>	Contains gas under pressure, may explode if heated
<b>SYMBOL:</b>	Gas Cylinder
<b>PRECAUTIONARY STATEMENT:</b>	<b>STORAGE:</b> Protect from sunlight, store in a well ventilated place



### 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 and eye contact with liquid or escaping vapor may include frostbite. Significant skin permeation and systemic toxicity after contact appears unlikely. There are no reports of human sensitization.

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.

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Hexafluoroethane	76-16-4	100



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**COMMON NAME and SYNONYMS**

R-116; CFC-116

There are no impurities or stabilizers that contribute to the classification of the material identified in Section 2

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**4. FIRST AID MEASURES**

**INHALATION:** If inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**SKIN:** Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.

**EYES:** In case of contact, 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**

**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 EXPLOSIVE LIMIT (volume % in air):</b>	Not applicable
<b>LOWER EXPLOSIVE LIMIT (volume % in air):</b>	Not applicable
<b>AUTODECOMPOSITION:</b>	Not determined

**EXTINGUISHING MEDIA:**

As appropriate for combustibles in area.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

R-116 is not flammable at ambient temperatures and atmospheric pressure. However, this material will become combustible when mixed with air under pressure and exposed to strong ignition sources. Contact with certain reactive metals may result in formation of explosive or exothermic reactions under specific conditions (e.g. very high temperatures and/or appropriate pressures).

**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**

**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)

### INCOMPATIBILITIES:

Freshly abraded aluminum surfaces at specific temperatures and pressures may cause a strong exothermic reaction. Chemically reactive metals: potassium, calcium, powdered aluminum, magnesium, and zinc.

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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>
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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
<b>ODOR THRESHOLD:</b>	Not established
<b>FLAMMABILITY:</b>	Not applicable
<b>LEL/UEL:</b>	None/None
<b>RELATIVE DENSITY:</b>	N/A
<b>PARTITION COEFF (n-octanol/water)</b>	Log Pow: 2.0. Note: This product is more soluble than octanol
<b>AUTO IGNITION TEMP:</b>	Not Determined
<b>DECOMPOSITION TEMPERATURE:</b>	>25°C
<b>VISCOSITY:</b>	Not applicable
<b>DENSITY:</b>	1.57 g/cm <sup>3</sup> @ -78 C (-108°F) – liquid C (-109°F) - liquid
<b>MELTING POINT:</b>	-101°C
<b>FLASH POINT:</b>	Not Applicable



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**EVAPORATION RATE:** Not established

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**10. STABILITY AND REACTIVITY**

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**CHEMICAL STABILITY**

Material is stable. However, avoid open flames and high temperatures.

**INCOMPATIBILITY WITH OTHER MATERIALS:**

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

**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 from single inhalation exposures to concentrations ranging from 20-80% include pulmonary changes, irregular respiration, and hyperactivity, followed by decreased activity, tissue congestion or closed eyes. Exposures at 3% caused 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. Repeated exposures to rats and guinea pigs to concentrations > 12% showed altered blood counts, lung inflammation, and histologic changes in the liver. Long term exposures to > 20% 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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**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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**12. ECOLOGICAL INFORMATION**

None Determined. Due to the high volatility, not expected to cause soil or water pollution.

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**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:**

Comply with Federal, State and local regulations. Reclaim by distillation or remove to a permitted waste disposal facility.

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**14. TRANSPORT INFORMATION**

**US DOT ID NUMBER:** UN2193  
**US DOT PROPER SHIPPING NAME:** Hexafluoroethane or Refrigerant Gas R 116  
**US DOT HAZARD CLASS:** 2.2  
**SHIPPING LABEL:** Nonflammable Gas

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**15. REGULATORY INFORMATION**

**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

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

**CALIFORNIA PROPOSITION 65:**

The ingredients in this product do not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION**

**CURRENT ISSUE DATE:** May, 2018  
**PREVIOUS ISSUE DATE:** May, 2015

**NFPA, NPCA-HMIS:**



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

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

**DISCLAIMER:**

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