



NATIONAL REFRIGERANTS, INC.

R-152a

## Safety Data Sheet

R-152a

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** R-152a  
**OTHER NAME:** Difluoroethane  
**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

**EMERGENCY OVERVIEW:**  
Flammable gas. Liquid under high pressure.

### 2. HAZARDS IDENTIFICATION

**CLASSIFICATION:** Flammable Gas, Gas under pressure, Compressed Gas  
**SIGNAL WORD:** DANGER  
**HAZARD STATEMENT(S):** Extremely flammable gas, Contains gas under pressure, may explode if heated  
**SYMBOL(S):** Flames, Gas Cylinder



#### PRECAUTIONARY STATEMENT(S):

**Prevention:** Keep away from heat, sparks, open flame, and hot surfaces. No Smoking

**Response:** Leaking gas fire: Do not extinguish unless leak can be stopped immediately. Eliminate all ignition sources if safe to do so.

**Storage:** Protect from sunlight, store in a well ventilated place.

#### POTENTIAL HEALTH EFFECTS

##### Effects of Overexposure:

###### Eye Contact

Eye contact with the rapidly evaporation liquid may cause frostbite.

###### Skin Contact

Skin contact with the rapidly evaporation liquid may cause frostbite. Frostbite effects are a change in color of the skin to gray or white, followed by blistering.



**Inhalation**

Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Inhalation of high vapor concentration may cause dizziness, disorientation, incoordination, narcosis, nausea or vomiting, leading to unconsciousness, cardiac irregularities, or death.

**Ingestion**

Not an expected route of exposure.

---

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

---

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Difluoroethane	75-37-6	100

**COMMON NAME and SYNONYMS**

R-152a; HFC152A

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

---

**4. FIRST AID MEASURES**

---

**SKIN:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Treat for frostbite if necessary, by gently warming affected area.

**EYES:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**INHALATION:**

If high concentrations are inhaled, immediately remove to fresh air. Keep person clam. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. 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 be used with special caution and only in situations of emergency life support.

---

**5. FIRE FIGHTING MEASURES**

---

**FLAMMABLE PROPERTIES**

<b>FLASH POINT:</b>	<-50 deg. C (<-58 deg. F)
<b>AUTOIGNITION TEMPERATURE:</b>	454°C (849 deg. F)
<b>UPPER EXPLOSIVE LIMIT:</b>	16.9%
<b>LOWER EXPLOSIVE LIMIT:</b>	3.9%
<b>EXTINGUISHING MEDIA:</b>	Water Spray, Water Fog, Dry Chemical, Carbon Dioxide, "Alcohol" foam.

**UNUSUAL FIRE HAZARDS:**

Flammable. Cylinders are equipped with temperature and pressure relief devices but may still rupture under fire conditions. Use water spray to cool cylinders and tanks



**FIRE FIGHTING INSTRUCTIONS:**

Keep container cool with water spray. If gas exiting container ignites, stop flow of gas. Do not put out the fire unless leak can be stopped immediately. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire condition.

**6. ACCIDENTAL RELEASE MEASURES**

**SPILL AND LEAK PROCEDURES:**

If a spill can cause a concentration in excess of 1,000 ppm, turn off valves and ignition sources. Evacuate area. Ventilate area, especially low places where heavy vapors might collect. Wear self-contained breathing apparatus (SCBA). If this product is spilled and not recovered, or is recovered as a waste for treatment or disposal. CERCLA Reportable Quantity is 100 lbs. (Release of an unlisted Hazardous Waste characteristic of ignitability).

**7. HANDLING AND STORAGE**

**NORMAL HANDLING:** (Always wear recommended personal protective equipment.)

Avoid breathing high concentration of vapors and avoid liquid contact with skin or eyes. Use with sufficient ventilation to keep employee exposure below recommended limits. Lines and equipment which will contain 152a aerosol propellant should be pre-tested with nitrogen using soapy water to detect leaks.

**STORAGE RECOMMENDATIONS:**

Clean, dry area. Do not heat above 52 deg. C / 125 deg. F.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**ENGINEERING CONTROLS:**

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical exhaust should be used in low or enclosed places. Ground all equipment and cylinders before use. Use explosion-proof electrical equipment rated Class I, Group D in Division 1 locations. In Division 2 locations, all spark-producing electrical equipment must be explosion-proof and rated Class I, Group D. Non-sparking motors need not be explosion-proof.

**PERSONAL PROTECTIVE EQUIPMENT:**

**SKIN PROTECTION:**

Impervious gloves and Fire protective clothing (NOMEX) with antistatic control should be worn when handling the product.

**EYE PROTECTION:**

Chemical splash goggles should be worn when handling the liquid.

**RESPIRATORY PROTECTION:**

Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

**EXPOSURE GUIDELINES**

(Exposure Limits)

**INGREDIENT NAME**

Difluoroethane

**ACGIH TLV**

None Established

**OSHA PEL**

None Established

**OTHER LIMIT**

\*1000 ppm TWA (8hr)



---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

<b>APPEARANCE:</b>	Clear, colorless liquid and vapor
<b>PHYSICAL STATE:</b>	Gas at ambient temperatures
<b>ODOR:</b>	Slight ethereal
<b>SOLUBILITY IN WATER :</b>	0.28 WT% @ 25C (77F) (87 psia)
<b>BOILING POINT:</b>	-25°C (-13°F)
<b>VAPOR PRESSURE:</b>	87 psia @ 25 deg. C (77°F)
<b>FLASH POINT:</b>	None
<b>EVAPORATION RATE:</b>	No data available
<b>FLAMMABILITY:</b>	Flammable
<b>LEL/UEL:</b>	3.9% / 16.9%
<b>PARTITION COEFFICIENT n-OCTANOL/WATER:</b>	Log Pow: 1.13
<b>AUTO IGNITION TEMPERATURE:</b>	454°C / 850° F
<b>DECOMPOSITION TEMPERATURE:</b>	No data available
<b>VISCOSITY:</b>	Not applicable
<b>VAPOR DENSITY (air = 1.0):</b>	2.4
<b>% VOLATILES BY VOLUME:</b>	100 WT%
<b>DENSITY</b>	0.90 g/cc at 25 deg. C (77 deg. F) - Liquid
<b>pH:</b>	Not applicable
<b>MELTING POINT:</b>	-117°C / -179°F
<b>SPECIFIC GRAVITY (Water=1):</b>	0.90
<b>MOLECULAR FORMULA:</b>	CF <sub>2</sub> HCH <sub>3</sub>
<b>MOLECULAR WEIGHT:</b>	66.05

---

## 10. STABILITY AND REACTIVITY

---

### CHEMICAL STABILITY:

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

**REACTIVITY:** Will not polymerize

### INCOMPATIBILITY WITH OTHER MATERIALS:

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

### CONDITIONS TO AVOID:

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

---

## 11. TOXICOLOGICAL INFORMATION

---

Rat inhalation LC50 (4 hr.): 2050 gm/m<sup>3</sup>; 128,000 ppm

Mouse inhalation LC50 (2 hr.): 1750 gm/m<sup>3</sup>

In screening studies with experimental animals, exposure above 25,000 ppm followed by a large epinephrine challenge has induced serious cardiac irregularities. Preliminary screening tests indicated that 1-Chloro-1,1-difluoroethane may be weakly mutagenic. In vivo cytogenicity and dominant lethal assays for mutagenicity were negative. In a two year rat inhalation study, 1-Chloro-1,1-difluoroethane produced no chronic or carcinogenic effects at levels as high as 2% in air.



**POTENTIAL HEALTH EFFECTS**

**Effects of Overexposure:**

**Eye Contact**

Eye contact with the rapidly evaporation liquid may cause frostbite.

**Skin Contact**

Skin contact with the rapidly evaporation liquid may cause frostbite. Frostbite effects are a change in color of the skin to gray or white, followed by blistering.

**Inhalation**

Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Inhalation of high vapor concentration may cause dizziness, disorientation, incoordination, narcosis, nausea or vomiting, leading to unconsciousness, cardiac irregularities, or death.

**Ingestion**

Not an expected route of exposure.

**12. ECOLOGICAL INFORMATION**

**DEGRADABILITY (BOD): 1,1-** Difluoroethane is a gas at room temperature; therefore, it is unlikely to remain in water.

**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:**

Reclaim by distillation, incinerate, or remove to a permitted waste facility. Comply with Federal, State, and local regulations. This material may be a RCRA hazardous waste upon disposal due to the ignitability characteristic.

**14. TRANSPORT INFORMATION**

<b>US DOT ID NUMBER:</b>	UN1030
<b>US DOT HAZARD CLASS:</b>	US DOT PROPER SHIPPING NAME: 1,1-Difluoroethane or Refrigerant gas R-152a
	US DOT HAZARD CLASS: 2.1
	US DOT PACKING GROUP: Not applicable

**15. REGULATORY INFORMATION**

**U. S. FEDERAL REGULATIONS:**

TSCA Inventory Status: Reported/Included.

Title III Hazard classification sections 311,312

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

Lists:

SARA Extremely Hazardous Substance	-No
CERCLA Hazardous Substance	-(*)
SARA Toxic Chemicals	-No

\* See Disposal Information



---

HFC-152a is a flammable gas as defined by OSHA in 29CFR 1910.1200 (c). Use of this product may require compliance with 29CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.

---

**16. OTHER INFORMATION**

---

**NFPA, NPCA-HIMS RATING**

HMS Classification: Health – 1, Flammability – 4, Reactivity – 1  
Personal Protection Rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

**CURRENT ISSUE DATE:** April , 2015  
**PREVIOUS ISSUE DATE:** November, 2012

**DISCLAIMER:**

National Refrigerants, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. **NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN.** The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other methods of use of the product and of the information referred to herein are beyond the control of National Refrigerants. National Refrigerants expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.