

# Material Safety Data Sheet

## (REFRIGERANT R152a)

Information in this format is provided as a service to our customers and is intended only for their use. Others may use it at their own discretion and risk. It is subject to revision as additional knowledge and experience are gained. Please return to this website for the most current version.

### R152a

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Material Identification

Corporate MSDS Number: HFC 152a CAS Number: 75-37-6  
Product Name HFC 152a  
Chemical Family Hydrochlorofluorocarbons  
Chemical Formula C<sub>2</sub>H<sub>4</sub>F<sub>2</sub>  
Chemical Name 1,1-Difluoroethane (HFC-152a)  
Product Use refrigerants, blowing agent, aerosol, detergent and PVDF

### Company Identification

**MANUFACTURER/DISTRIBUTOR:** Cosutin Industrial CO., Limited  
Add: Unit B, 10/F Lee May Building 788-790 Nathan Road, Mongkok, Kowloon, H.K.  
Tel.: +852 21395855 Fax: +852 81673777  
**PHONE NUMBERS Product Information:** +86 136 31481545  
**Transport Emergency:** +86 136 31481545  
**Medical Emergency:** +86 136 31481545

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS No.	Typical Wt. %
1,1-Difluoroethane ( HFC-152a)	75-37-6	100%

## 3. HAZARDS IDENTIFICATION

### Potential Health Effects

Inhalation of HFC-152a may cause nonspecific discomfort such as nausea, headache or weakness, or temporary nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Higher exposures may lead to irritation of nose, throat, and lungs with cough, difficulty breathing or shortness of breath, temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation, or abnormal kidney function as detected by laboratory tests. Gross overexposure may be fatal. Individuals with preexisting

diseases of the central nervous system, cardiovascular system, lungs or kidney 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.

---

## 4. FIRST AID MEASURES

---

**INHALATION**

If high concentrations are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and call a physician.

**SKIN CONTACT**

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.

**EYE CONTACT**

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. Notes to Physicians. Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution only in situations of emergency life support.

---

## 5. FIRE FIGHTING MEASURES

---

**Flammable Properties**

Flash Point: <-50°C

Flammable limits in Air, % by Volume

LEL : 3.9

UEL : 16.9

Autoignition: 454°C

**Fire and Explosion Hazards:**

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

**Extinguishing media**

Water Spray, Water Fog, Dry Chemical. Carbon dioxide.

**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 conditions.

---

## 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**

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).

---

## 7. HANDLING AND STORAGE

---

### **Handling (Personnel)**

Avoid breathing high concentrations of vapors and avoid liquid contact with skin or eyes. Use with sufficient ventilation to keep employee exposure below recommended limits. Lines and equipment that will contain 152a. Aerosol Propellant should be pretested with nitrogen using soapy water to detect leaks.

### **Storage**

Clean, dry area. Do not heat above 52°C.

---

## 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**

Impervious gloves and chemical splash goggles should be worn when handling the liquid. Fire protective clothing (NOMEX) with antistatic control should be worn when handling this product. 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**

PEL (OSHA) : None Established

TLV (ACGIH) : None Established

WEEL (AIHA) : 1000 ppm, 8 Hr. TWA

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### **Physical Data**

Boiling Point : -25°C

Vapor Pressure: 87 psia at 25°C

Vapor Density: 2.4 (Air = 1.0) at 25°C

% Volatiles: 100 WT%

Solubility in water: 0.28 WT% @ 25°C (87 psia)

Odor: Slight ethereal  
Form: Gas  
Color: Clear, colorless  
Density: 0.90 g/cc at 25°C - Liquid

---

## 10. STABILITY AND REACTIVITY

---

### 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.

### Polymerization

Polymerization will not occur.

### Other Hazards

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.

---

## 11. TOXICOLOGICAL INFORMATION

---

### Animal Data

Oral ALD: >1500 mg/kg in rats

Inhalation ALC, 4 hr: 383,000 ppm in rats

HFC-152a has not been tested for skin and eye irritancy, nor for animal sensitization.

Ingestion of single high doses of HFC-152a caused weight loss and lethargy. Inhalation of high levels of HFC-152a caused labored breathing, lung irritation, lethargy, incoordination and loss of consciousness. Cardiac sensitization occurred in dogs exposed to a concentration of 150,000 ppm in air and given an intravenous epinephrine challenge. Repeated inhalation exposures caused increased urinary fluoride, reduced kidney weight, and reversible kidney changes. Based on an independent peer review the reversible kidney changes are considered artifacts of the tissue and slide processing and not a compound related effect.

Animal testing demonstrate no carcinogenic activity nor developmental effects. No animal data are available to define reproductive effects of HFC-152a.

HFC-152a has not produced genetic damage in bacterial cultures. It has not been tested in animals.

---

## 12. ECOLOGICAL INFORMATION

---

### Aquatic Toxicity

1,1-Difluoroethane

96h LC50: Fish (unspecified species) 295.783 mg/l

96h EC50: Algae 47.755 mg/l (calculated)

48h EC50: Daphnia 146.695 mg/l

---

## 13. DISPOSAL CONSIDERATIONS

---

**Waste Disposal**

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

---

**14. TRANSPORTATION INFORMATION**

---

**Shipping Information**

DOT/IMO  
Proper Shipping Name : 1,1-DIFLUOROETHANE  
Hazard Class : 2.1  
UN No. : 1030  
DOT/IMO Label : FLAMMABLE GAS  
Special Information : CARGO AIRCRAFT ONLY  
Shipping Containers  
Cylinders  
Ton Tanks

---

**15. REGULATORY INFORMATION**

---

**SARA 313 Regulated Chemical(s):** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Prop. 65 :** Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

**NJ Right to Know Regulated Chemical(s) :** Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): 1,1-Difluoroethane

---

**16. OTHER INFORMATION**

---

**Revision Information**

Revision Data	19 JUN 2010	Revision Number 2
Supersedes Revision Dated	16-JUN-2010	

**Revision Summary**

Revised section 9.

**Key**

NE= Not Established                      NA= Not Applicable                      (R) = Registered Trademark

**Effective Date**                                      19 JUN 2018

End of MSDS