

# Material Safety Data Sheet

## (R152a/DME Blend)

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### R152a/DME Blend

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Material Identification

Corporate MSDS Number: R152a/DME Blend      CAS Number: 75-37-6/115-10-6  
Product Name      R152a/DME Blend  
Chemical Family      Hydrochlorofluorocarbon blend  
Chemical Formula      C2H4F2/C2H6O  
Chemical Name      1,1-Difluoroethane (HFC-152a)/ Dimethyl Ether blend  
Product Use      refrigerants, blowing agent, aerosol

### 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 ( R-152a)	75-37-6	75%
Dimethyl Ether	115-10-6	25%

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

Form : Liquefied gas

Color : Colorless

Odor : slight

Hazard Summary: Warning! Container under pressure. Flammable. Gas reduces oxygen available for breathing. Causes asphyxiation in high

concentrations. The victim will not realize that he/she is suffocating. Excessive exposure may cause central nervous system effects including drowsiness and dizziness. Excessive exposure may also cause cardiac arrhythmia. Do not breathe vapour. Irritating to eyes and skin. Avoid contact with skin, eyes and clothing. At higher temperatures, (>250 C), decomposition products may include hydrofluoric acid (HF) and carbonyl halides. The ACGIH Threshold Limit Values (2007) for Hydrogen Fluoride are TLV-TWA 0.5 ppm and Ceiling Exposure Limit 2 ppm.

**Potential Health Effects**

Skin : Avoid skin contact with leaking liquid (danger of frostbite).

May cause frostbite.

Irritating to skin.

Eyes : Irritating to eyes.

May cause frostbite.

Ingestion : Unlikely route of exposure.

Effects due to ingestion may include: Gastrointestinal discomfort

Inhalation : Gas reduces oxygen available for breathing.

Causes asphyxiation in high concentrations. The victim will not realize that he/she is suffocating.

Excessive exposure may cause central nervous system effects including drowsiness and dizziness. Excessive exposure may also cause cardiac arrhythmia.

Chronic Exposure : None known.

**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**

Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Use oxygen as required, provided a qualified operator is present. Call a physician. Do not give drugs from adrenaline-ephedrine group.

**SKIN CONTACT**

After contact with skin, wash immediately with plenty of water. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. If symptoms persist, call a physician.

**EYE CONTACT**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In case of frostbite water should be lukewarm, not hot. If symptoms persist, call a physician.

**INGESTION**

Unlikely route of exposure. As this product is a gas, refer to the inhalation section. Do not induce vomiting without medical advice. Call a physician immediately.

**Notes to physician**

Treatment : 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. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions. Treat frostbitten areas as needed.

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## 5. FIRE FIGHTING MEASURES

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### **Fire Fighting Instructions**

Flammable.

ASHRAE 34

In case of fire, allow gas to burn if flow cannot be shut off immediately.

Apply water from a safe distance to cool container and protect surrounding area.

### **Fire and Explosion Hazards:**

Contents under pressure.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Flash back possible over considerable distance.

Fire or intense heat may cause violent rupture of packages.

Cool closed containers exposed to fire with water spray.

Do not allow run-off from fire fighting to enter drains or water courses.

In case of fire hazardous decomposition products may be produced such as:

Hydrogen fluoride

Carbon monoxide

Carbon dioxide (CO<sub>2</sub>)

Carbonyl halides

### **Extinguishing media**

Small fire - Dry Chemical. Carbon dioxide.

Large fire - Water Spray

### **Special protective equipment for firefighters:**

In the event of fire, wear self-contained breathing apparatus.

In the event of fire and/or explosion do not breathe fumes.

Wear self-contained breathing apparatus and protective suit.

No unprotected exposed skin areas.

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## 6. ACCIDENTAL RELEASE MEASURES

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### **Safeguards (Personnel)**

Immediately evacuate personnel to safe areas.

Keep people away from and upwind of spill/leak.

Wear personal protective equipment. Unprotected persons must be kept away.

Remove all sources of ignition.

Pay attention to flashback.

Avoid skin contact with leaking liquid (danger of frostbite).

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Avoid accumulation of vapours in low areas.

Provide adequate ventilation.

Unprotected personnel should not return until air has been tested and determined safe.

Ensure that the oxygen content is  $\geq$  19.5%.

### **Accidental Release Measures**

Prevent further leakage or spillage if safe to do so.

The product evaporates readily.

Ventilate the area.

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## 7. HANDLING AND STORAGE

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**Handling (Personnel)**

Handle with care.

Avoid inhalation of vapour or mist.

Do not get in eyes, on skin, or on clothing.

Wear personal protective equipment.

Use only in well-ventilated areas.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.

Follow all standard safety precautions for handling and use of compressed gas cylinders.

Use authorized cylinders only.

Protect cylinders from physical damage.

Do not puncture or drop cylinders, expose them to open flame or excessive heat.

Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

Do not remove screw cap until immediately ready for use.

Always replace cap after use..

**Advice on protection against fire and explosion**

Container hazardous when empty.

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits.

Keep product and empty container away from heat and sources of ignition.

The heavy vapours can overcome a considerable distance up to the source of ignition.

**Storage**

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C.

Do not pierce or burn, even after use.

Keep containers tightly closed in a dry, cool and well-ventilated place.

Keep away from heat and sources of ignition.

Storage rooms must be properly ventilated.

Ensure adequate ventilation, especially in confined areas.

Protect cylinders from physical damage.

Store away from incompatible substances.

Store in original container.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Protective measures: Do not breathe vapour.

Avoid contact with skin, eyes and clothing.

Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures: General room ventilation is adequate for storage and handling.

Perform filling operations only at stations with exhaust ventilation facilities.

Eye protection: Do not wear contact lenses.

Wear as appropriate:

Safety glasses with side-shields

If splashes are likely to occur, wear: Goggles or face shield, giving complete protection to eyes.

Hand protection : Leather gloves

In case of contact through splashing: Protective gloves, Neoprene gloves

Polyvinyl alcohol or nitrile- butyl-rubber gloves

- Skin and body protection: Avoid skin contact with leaking liquid (danger of frostbite).  
Wear cold insulating gloves/ face shield/ eye protection.
- Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment.  
Wear a positive-pressure supplied-air respirator.  
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.  
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
- Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.  
Ensure adequate ventilation, especially in confined areas.  
Avoid contact with skin, eyes and clothing.  
Remove and wash contaminated clothing before re-use.  
Keep working clothes separately.  
When using, do not eat, drink or smoke.
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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Physical Data

Physical state : Liquefied gas  
Color : Colorless  
Odor : slight  
pH : Neutral  
Melting point/freezing point : -127 °C  
Boiling point/boiling range : -24.7 °C  
Flash point : not applicable  
Flammability : Extremely flammable gas.  
Lower explosion limit : 3 %(V)  
Upper explosion limit : 18 %(V)  
Vapor pressure : 6,012 hPa at 21.1 °C(70.0 °F)  
13,203 hPa at 54.4 °C(129.9 °F)  
Vapor density : 2.29 (Air = 1.0)  
Density : 0.909 g/cm<sup>3</sup> at 21.1 °C  
Water solubility : 0.13 g/l  
Ignition temperature : 455 °C  
Autoignition temperature : 455 °C  
Decomposition temperature : > 250 °C  
Molecular Weight : 66.06 g/mol  
Global warming potential (GWP): 120  
Ozone depletion potential (ODP): 0

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## 10. STABILITY AND REACTIVITY

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### Chemical Stability

Stable under normal conditions.  
Possibility of hazardous reactions: Hazardous polymerisation does not occur.  
Conditions to avoid :  
Heat, flames and sparks.  
Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.  
Decomposes under high temperature.  
Some risk may be expected of corrosive and toxic decomposition products.

Incompatible materials to avoid: Finely divided aluminium

Potassium

Calcium

Powdered metals

Aluminium

Magnesium

Zinc

Hazardous decomposition products: Halogenated compounds

Hydrogen fluoride

Carbonyl halides

Carbon oxides

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## 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity: LDLo > 1,500 mg/kg

Species: rat

No deaths

Acute inhalation toxicity: LC50: ca. 383000 ppm

Exposure time: 2 h

Species: rat

Sensitisation: Cardiac sensitization

No-observed-effect level >150,000 ppm

Genotoxicity in vitro: Test Method: Ames test

Result: negative

Carcinogenicity: Species: rat

Application Route: Inhalation

Exposure time: two-year

Did not show carcinogenic effects in animal experiments.

Further information: Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Rapid evaporation of the liquid may cause frostbite. Avoid skin contact with leaking liquid (danger of frostbite).

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## 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

### **Further information on ecology**

Additional ecological information: This product contains greenhouse gases which may contribute to global warming. Do NOT vent to the atmosphere.

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## 13. DISPOSAL CONSIDERATIONS

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### **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.

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## 14. TRANSPORTATION INFORMATION

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### Shipping Information

DOT/IMO

Proper Shipping Name : 1,1-DIFLUOROETHANE/DME blend

Hazard Class : 2.1

DOT/IMO Label : FLAMMABLE GAS

Special Information : CARGO AIRCRAFT ONLY

Shipping Containers:

Cylinders

Ton Tanks

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## 15. REGULATORY INFORMATION

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**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

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## 16. OTHER INFORMATION

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### Revision Information

Revision Date 10 JUN 2018

Revision Number 3

Supersedes Revision Dated 16-JUN-2018

### Key

NE= Not Established

NA= Not Applicable

(R) = Registered Trademark

**Effective Date**

19 JUN 2018

End of MSDS