Zhejiang Fotech International Co., Ltd

Material Safety Data Sheet

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

MATERIAL IDENTIFICATION

MSDS Number: FOTECH011 **Formula:** CH3CCL2F
Molecular Weight: 116.95

TRADENAMES AND SYNONYMS

R141b 1, 1-dichloro-1-fluoroethane

COMPANY IDENTIFICATION

MANUFACTURER'S/DISTRIBUTOR'S NAME

Zhejiang Fotech International Co., Ltd.
No.139, Renmin West RD., Jinhua, Zhejiang, P.R. China-321000

PHONE NUMBERS

Product Information: +86-571-87918266
Medical Emergency: +86-571-87085066

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS

Material: 1, 1-Dichloro-1-fluoroethane
CAS Number: 1717-00-6

3. HAZARD IDENTIFICATION

Emergency Overview

Clear, colorless liquid and vapour with faint ether odor.
WARNING!
Vapor reduces oxygen available for breathing.

Harmful if inhaled and may cause heart irregularities, unconsciousness or death. Non-flammable volatile liquid which may cause eye irritation or drying of the skin may decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products.

Potential Health Effects

Skin contact and inhalation are expected to be the primary routes of occupational exposure to this material. Prolonged or repeated contact removes oils from the skin and may dry skin causing irritation, redness and rash. High vapor concentrations are irritating to the eyes and respiratory tract and may result in central nervous system (CNS) effects such as headache, dizziness, drowsiness and, in severe exposure, loss of consciousness and death. The dense vapor of this material may reduce the available oxygen for breathing. Prolonged exposure to an oxygen deficient atmosphere may be fatal. Inhalation may cause an increase in the sensitivity of the heart to adrenaline, which could result in irregular or rapid heartbeats. Medical conditions aggravated by exposure to this material include heart disease or compromised heart function.

4. FIRST AID MEASURES

SKIN CONTACT

In case of contact, flush the area with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops and persists.

EYES CONTACT

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

INHALATION

Immediately remove to fresh air. Keep person calm. Call a physician. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

5. FIRE-FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: None **Flash Point Method: TCC**

Autoignition Temperature: 1022F/550C
Flammable Limits-Upper: 15.5
Lower: 7.4

EXTINGUISHING MEDIA

Use water spray, water fog, carbon dioxide, or dry chemical

FIRE FIGHTING INSTRUCTIONS

Cool fire exposed containers well after the fire is out to prevent possible explosions. Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Fire and Explosion Hazards

May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. Some mixtures of HCFCs and/or HFCs, and air or oxygen may be combustible if pressurized and exposed to extreme heat or flame. Container may explode if heated due to resulting pressure rise.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Use Halogen leak detector or other suitable means to locate leaks or check atmosphere. Keep upwind. Evacuate enclosed spaces and disperse gas with floor-level forced-air ventilation. Exhaust vapors outdoors. Do not smoke or operate internal combustion engines. Remove flames and heating elements.

7. HANDLING AND STORAGE

HANDLING

Do not get in eyes, on skin or clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat, sparks and flame. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is destroyed. Do not reuse this container. Do not cut or weld on or near this container

STORAGE

Although this material is stable in long-term storage in carbon steel containers, it may

gradually decompose in the presence of ferric chloride. The presence of excess levels of moisture, especially as a separate layer, should be avoided since it may lead to corrosion of carbon steel and formation of ferric chloride. It is recommended that containers be raised above floor or ground during extended storage periods to prevent container corrosion due to standing water. Prior to putting a storage system into service for this product, or after maintenance, ensure that the system is dry and oxygen-free. Purging the system with dry nitrogen is recommended. In addition, containers previously exposed to hydrogen chloride (for example, from impurities in chlorinated blowing agents or solvents), should be thoroughly cleaned first.

8. EXOPSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Personal Protective Equipment

EYE/FACE PROTECTION

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

SKIN PROTECTION

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Wear face shield and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

RESPIRATORS

Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point:	**89.6F /32C**
Vapor Pressure:	**10 psia at 20 C (68 F)**
Vapor Density:	**4.0**
Solubility in Water:	**slight**
PH:	**NA**
Appearance/Odor:	**Clear, colorless liquid and vapor with faint ether odor**
Freezing point:	**-154F/-103.5C**
Percent Volatile:	**100**

10. STABILITY AND REACTIVITY

Chemical Stability

Stable

Incompatibility

Avoid contact with hydrochloric acid, alkali or alkaline earth metals, finely powdered metals (aluminum, magnesium, zinc) and strong oxidizers since they may react or accelerate decomposition.

Hazardous Decomposition Products

Thermal decomposition products include hydrogen fluoride, hydrogen chloride, carbon monoxide, carbon dioxide, chlorine and carbonyl halides

11. TOXICOLOGICAL INFORMATION

Toxicological information

No allergic skin response was observed in guinea pigs following repeated skin exposure to this material using the maximization procedure. Inhalation of high concentrations of this material (generally exceeding 10000 ppm) produces a transient anesthetic effect in rodents. As with many other halogenated hydrocarbons, inhalation of this material, followed by intravenous injection of epinephrine to simulate human stress reactions, resulted in heart sensitization at levels above 5000-10000 ppm in dogs and monkeys. Longer term inhalation studies of up to 13-weeks duration at concentrations of this material up to 20000 ppm resulted in minor changes in body weight and slight changes in blood chemistry in rats. Repeated inhalation of this material vapors at levels up to 15000 ppm for 16-weeks did not produce evidence of nervous system toxicity or behavioral effects in rats. Long-term inhalation (2-years) of high concentrations of this material (5000 and 20000 ppm) caused an increase in the incidence of benign, not life-threatening tumors of the testes in rats. No exposure-related effects or tumors were

observed at 1500 ppm in this study. No birth defects were noted in rabbits exposed to this material by inhalation during pregnancy at levels up to 12500 ppm; signs of maternal toxicity were noted at 4200 ppm or above. No birth defects were noted in rats exposed to this material by inhalation during pregnancy at levels up to 20000 ppm; toxic effects were noted in the mothers and their offspring. In a reproduction study, reductions in litter size, total liter weight and growth rate were observed in rats exposed by inhalation to 20000 ppm of this material for 2-generations. Delayed sexual maturity of male offspring from parents exposed to 8000 and 20000 ppm may have been related to the lower growth rate. This material has generally produced no genetic changes in standard tests using animals (in vivo tests) and animal or bacterial cells. Metabolism studies in rats exposed by inhalation show that this material is not metabolized or accumulated in the body to any significant extent. Single exposure (acute) studies indicate:

Oral - Practically Non-toxic to Rats (LD50 > 5,000 mg/kg)
Dermal - No More Than Slightly Toxic to Rats (LD50 > 2,000 mg/kg)
Inhalation - Practically Non-toxic to Rats (4-hr LC50 61,647 ppm)
Eye Irritation - Non-irritating to Slightly Irritating to Rabbits
Skin Irritation - Non-irritating to Rabbits (4-hr and 24-hr exposures)

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

48-hr EC50 Daphnia magna: 31.2 mg/l, slightly Toxic
96-hr Zebra fish (static): 126 mg/l, Practically Non-toxic

Chemical Fate Information

Based on its low n-octanol/water partition coefficient (log Pow 2.3), bioaccumulation of this material is considered unlikely.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Recover, reclaim or recycle when practical. Dispose of in accordance with federal, state and local regulations. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. TRANSPORT INFORMATION

Shipping Information

DOT Name: **Refrigerants or Dispersants NOI, Liquid or Gas**
DOT Packing Group: **PG**
DOT Special Information: **Not regulated when shipped by ground, water or air.**

15. REGULATORY INFORMATION

Hazard Categories Under Criteria of SARA Title IIII Rules (40 CFR Part 370)

Immediate (Acute) Health Y **Fire N**
Delayed (Chronic) Health N **Reactive N**
Sudden Release of Pressure N

The components of this product are all on the TSCA inventory list.

16. OTHER INFORMATION

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product that confirms to the specification, unless otherwise stated. In the case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and environment.

Responsibility for MSDS: MSDS Coordinator
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Indicates updated section.

End of MSDS