

1 PRODUCT AND COMPANY IDENTIFICATION**Fluorochemicals Group**
2000 Market Street

Philadelphia, PA 19103

Information Telephone Numbers

Product Information

Product Name Forane (R) 142b
Product Synonym(s)Chemical Family Hydrochlorofluorocarbons
Chemical Formula CH3CCIF2
Chemical Name 1-chloro-1,1-difluoroethane (HCFC-142b)
EPA Reg Num
Product Use Chemical Intermediate

EMERGENCY PHONE NUMBERS:

Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887

Medical: Rocky Mountain Poison Control Center
(303) 623-5716 (24Hrs)

Phone Number

800-245-5858

Available Hrs

8:00 am - 5:30 pm (Eastern)

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical Wt. %	OSHA
1-Chloro-1,1-difluoroethane, HCFC-142b	75-68-3	100%	Y

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

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

3 HAZARDS IDENTIFICATION**Emergency Overview**

Colorless liquified gas with faint ether odor.

DANGER!

FLAMMABLE LIQUID AND GAS UNDER PRESSURE, OVERHEATING OR OVERPRESSURIZING MAY CAUSE GAS RELEASE OR VIOLENT CYLINDER BURSTING. MAY DECOMPOSE ON CONTACT WITH FLAMES OR EXTREMELY HOT METAL SURFACES TO PRODUCE TOXIC AND CORROSIVE PRODUCTS. VAPOR REDUCES OXYGEN AVAILABLE FOR BREATHING AND IS HEAVIER THAN AIR. HARMFUL IF INHALED AND MAY CAUSE HEART IRREGULARITIES, UNCONSCIOUSNESS OR DEATH. LIQUID CONTACT WITH EYES OR SKIN MAY CAUSE FROSTBITE.

Potential Health Effects

Skin contact and inhalation are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, this material is considered to be practically non-toxic if inhaled. However, exposure to gas of this material at high concentrations may effect the nervous system and produce a rapid anesthetic effect. The dense vapor of this material can reduce the oxygen available for breathing and produce symptoms such as headache, dizziness, drowsiness, cyanosis and lack of muscle control followed by collapse. Prolonged exposure to and oxygen-deficient atmosphere may be fatal. Inhalation of this material may cause an increase in the sensitivity of the heart to adrenaline, which could result in irregular heart beats and reduced heart function. Workers with heart disease or compromised heart function should limit exposure to this material.

4 FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water. Get medical attention if irritation persists.

IF ON SKIN, Flush exposed skin with lukewarm water (not hot), or use other means to warm skin slowly. Get medical attention if frostbitten by liquid or if irritation occurs.

IF SWALLOWED, Not applicable - product is a gas at ambient temperatures.

IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Do not give adrenaline, epinephrin or similar drugs following exposure to this product.

5 FIRE FIGHTING MEASURES**Fire and Explosive Properties**

Auto-Ignition Temperature	NE	
Flash Point	NA - GAS	Flash Point Method
Flammable Limits- Upper	15.5	
Lower	6.9	

Extinguishing Media

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

Fire Fighting Instructions

Stop the flow of gas if possible. Use water spray on person making shut-off. 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. Liquid and gas under pressure, overheating or overpressurizing may cause gas release and/or violent cylinder bursting. Container may explode if heated due to resulting pressure rise. Some mixtures of HCFCs and/or HFCs, and air or oxygen may be combustible if pressurized and exposed to extreme heat or flame.

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

7 HANDLING AND STORAGE**Handling**

Do not get in eyes, on skin or clothing. Avoid breathing gas. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat, sparks and flame. Empty container may contain hazardous residues. Do not reuse container. Do not cut, grind or weld on or near containers - explosion hazard. Use explosion proof equipment. Use grounding and bonding connection when transferring material to prevent static discharges, fire or explosion.

Storage

Do not apply direct flame to cylinder. Do not store cylinder in direct sun or expose it to heat above 120 F. Do not drop or refill this cylinder. Keep away from heat, sparks and flames.

8 EXPOSURE 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.

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. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

Respiratory Protection

Avoid breathing gas. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components (full facepiece recommended). Consult respirator manufacturer to determine appropriate type equipment for a 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.

Airborne Exposure Guidelines for Ingredients

Exposure Limit	Value
1-Chloro-1,1-difluoroethane, HCFC-142b	
WEEL TWA	- 1000 ppm 4100 mg/m3

-Only those components with exposure limits are printed in this section.

-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

-ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Colorless liquified gas with faint ether odor.
pH	NE
Specific Gravity	1.1 @ 30/0 C
Vapor Pressure	43.5 psia @ 21 C/70 F
Vapor Density	3.49
Melting Point	NE
Freezing Point	-131 C (-204 F)
Boiling Point	-9.8 C (14.4 F)
Solubility In Water	Slight
Percent Volatile	100
Molecular Weight	100.48

10 STABILITY AND REACTIVITY**Stability**

This material is chemically stable under specified conditions or storage, shipment and/or use. See HANDLING AND STORAGE section of this MSDS for specified conditions.

Incompatibility

Avoid contact with strong alkali or alkaline earth metals, finely powdered metals such as aluminum, magnesium or 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 and chlorine.

11 TOXICOLOGICAL INFORMATION**Toxicological Information**

Inhalation exposure causes an initial stimulation and then depression of the central nervous system. Symptoms in animals include loss of equilibrium, tremors, convulsions and narcosis. Death was usually attributed to respiratory failure. The lowest lethal concentration for a 30 minute exposure in rats was 500,000 ppm. Animals that died from inhalation exposure, generally showed lung irritation. Following inhalation exposure to this material at 200,000 ppm effects on the lungs were noted in rats; 100,000 ppm was severely irritating to the lungs and lethal to all rats within 9 exposures; repeated exposure to 10,000 ppm produced no effects in rats and dogs. Long term exposure to 20,000 ppm was reported to be the (NOEL) level in rats. No birth defects were noted in rats exposed by inhalation during pregnancy at levels up to 10,000 ppm. The results of tests for genetic changes were mixed.

Inhalation exposure to this material can cause cardiac arrhythmias and effects on the cardiac and respiratory system in dogs. Dogs treated with adrenalin then exposed by inhalation to this material at 50,000 ppm for 5 minutes exhibited cardiac sensitization. Following repeated inhalation exposure to this material no increases in urinary fluoride was reported and this material was not detected in the tissues.

Single exposure (acute) studies indicate:

Inhalation - Practically Non-Toxic to Mice (30 min-LC50 300,000 ppm)

Inhalation - Practically Non-Toxic to Mice (2 hr-LC50 368,000 ppm)

11 TOXICOLOGICAL INFORMATION

Inhalation - Practically Non-Toxic to Rats (6 hr-LC0 = 200,000 ppm)
Eye Irritation -Slightly Irritating to Rabbits (dry ice cooled liquid)

12 ECOLOGICAL INFORMATION**Ecotoxicological Information**

This material is slightly toxic to freshwater organisms such as rainbow trout (96-hr LC50 36 ppm) and practically non-toxic to guppies (96-hr LC50 220 ppm) and Daphnia magna (48-hr EC50 160- >190).

Chemical Fate Information

The octano/water partition coefficient (log Pow) for this material was reported to be 1.62

This material was evaluated with a Modified Strum Test (20-day= 5%) and determined to be not readily biodegradable.

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

DOT Name 1-Chloro-1,1-difluoroethane
DOT Technical Name (R-142b)
DOT Hazard Class 2.1
UN Number UN 2517
DOT Packing Group PG NA
RQ

15 REGULATORY INFORMATION**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)**

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

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

Ingredient Related Regulatory Information:**SARA Reportable Quantities**

CERCLA RQ

SARA TPQ

SARA Reportable Quantities

1-Chloro-1,1-difluoroethane, HCFC-142b

CERCLA RQ

100 LBS

SARA TPQ

SARA Title III, Section 313

This product does contain chemical(s) which are defined as toxic chemicals under and subject to the reporting requirements of, Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 986 and 40 CFR Part 372. See Section 2

1-Chloro-1,1-difluoroethane, HCFC-142b

Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

1-Chloro-1,1-difluoroethane, HCFC-142b

New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right-to-Know Substances List.

1-Chloro-1,1-difluoroethane, HCFC-142b

Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List.

1-Chloro-1,1-difluoroethane, HCFC-142b

16 OTHER INFORMATION**Revision Information**

Revision Date 19 JUN 2000 Revision Number 3
Supercedes Revision Dated 16-JUN-2000

Revision Summary

Revised section 9.

Key

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

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