



## 1 PRODUCT AND COMPANY IDENTIFICATION

**DFO**  
2000 Market Street

Philadelphia, PA 19103

Information Telephone Numbers

Product Information

Product Name Forane (R) 142b  
Product Synonym(s) R-142b, HCFC-142b

Chemical Family hydrochlorofluorocarbons

Chemical Formula CH3CCIF2

Chemical Name 1-chloro-1,1-difluoroethane

EPA Reg Num

Product Use Chemical Intermediate, Foam blowing agent, Refrigerant

EMERGENCY PHONE NUMBERS:

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

Medical: Rocky Mountain Poison Control Center  
(866) 767-5089 (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 Hazard 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

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. As with most liquified gases, contact with the rapidly volatilizing liquid can cause frostbite to any tissue. 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

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% v/v	
Lower	6.9% v/v	

##### 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

##### 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.

## 7 HANDLING AND STORAGE

### 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
<b>1-chloro-1,1-difluoroethane (HCFC-142b)</b>	
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.

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

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Colorless liquified gas with faint ether odor.
pH	NA
Specific Gravity	1.11 @ 25 C
Vapor Pressure	43.4 psia @ 21.1 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 could include Halogen acids (HCl and HF), Halogens, Carbon monoxide, Carbon dioxide, and Carbonyl halides.

**11 TOXICOLOGICAL INFORMATION****Toxicological Information**

Inhalation exposure can cause cardiac arrhythmias and effects on the cardiac and respiratory system in dogs. Dogs treated with adrenalin then exposed by inhalation exhibited cardiac sensitization. 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 and animals that died from inhalation exposure generally showed lung irritation. Following repeated inhalation exposure, effects on the lungs were noted in rats. No birth defects were noted in rats exposed by inhalation during pregnancy. The results of tests for genetic changes were mixed. Following repeated inhalation exposure, no increases in urinary fluoride was reported and this material was not detected in tissues.

Single exposure (acute) studies indicate:

Inhalation - Practically Non-toxic to Rats (6-hr LC50 >200,000 ppm)

Eye Irritation -Slightly Irritating to Rabbits (dry ice cooled liquid)

**12 ECOLOGICAL INFORMATION****Ecotoxicological Information**

This material is slightly toxic 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 mg/l).

**Chemical Fate Information**

This material is not readily biodegradable (5% after 20-days) and is practically not bioaccumulable (log Pow 1.64-2.05). In air, it has a half-life in the atmosphere of 12.8 years, an ozone depletion potential (ODP) of 0.065, a halocarbon global warming potential (HGWP) of 0.42, and a global warming potential with respect to CO2 of 1800.

**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  
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

1-chloro-1,1-difluoroethane (HCFC-142b) 100 LBS

**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 Amendments and Reauthorization Act of 1986 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 11 OCT 2004 Revision Number 8  
Supersedes Revision Dated 18-FEB-2004

**Revision Summary**

A TOFINA Chemicals, Inc. has changed its name to Arkema Inc.

**Key**



**Forane (R) 142b**  
Material Safety Data Sheet

**Arkema Inc.**

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

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