

1 PRODUCT AND COMPANY IDENTIFICATION**Fluorochemicals Group**

2000 Market Street

Philadelphia, PA 19103

EMERGENCY PHONE NUMBERS:

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

Medical: Rocky Mountain Poison Control Center
(303) 623-5716 (24Hrs)**Information Telephone Numbers****Phone Number****Available Hrs**

Product Information

800-245-5858

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

Product Name Forane (R) 143a

Product Synonym(s) HFC-143a, r-143a

Chemical Family Hydrofluorocarbons

Chemical Formula CH₃CF₃

Chemical Name 1,1,1 - trifluoroethane (HFC-143a)

EPA Reg Num

Product Use

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical Wt. %	OSHA
Ethane, 1,1,1-trifluoro-	420-46-2	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. 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	16.1	
Lower	7.1	

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
Ethane, 1,1,1-trifluoro-	
WEEL TWA	3400 mg/m3 1000 ppm

-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	0.98 @ 21 C / 70 F
Vapor Pressure	165 psia @ 21 C/70 F
Vapor Density	2.9
Melting Point	NE
Freezing Point	-168 F (-111 C)
Boiling Point	-54 F (48 C)
Solubility In Water	Slight
Percent Volatile	100
Molecular Weight	84.0

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, followed by intravenous injection of epinephrine to simulate stress reactions, resulted in cardiac sensitization in dogs. Following repeated inhalation exposure, lung irritant effects including mild bronchitis and pneumonia were observed in rats and guinea pigs. No adverse effects were observed in long-term oral studies with rats. No birth defects were noted in the offspring of rats or rabbits exposed by inhalation during pregnancy. No genetic changes were observed in standard tests using animal cells or whole animals. Both positive and negative results have been reported in tests using bacteria.

Single exposure (acute) studies indicate
Inhalation - Practically Non-Toxic to Rats (4-hr LC50 > 540,000 ppm)

12 ECOLOGICAL INFORMATION**Ecotoxicological Information**

This material is practically non-toxic to *Daphnia magna* (48-hr LC50 300 mg/l) and no more than slightly toxic to rainbow trout (96-hr LC50 >40 mg/l).

12 ECOLOGICAL INFORMATION**Chemical Fate Information**

No data are available.

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	Trifluoroethane, compressed
DOT Technical Name	(R-143a)
DOT Hazard Class	2.1
UN Number	UN 2035
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:**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.

Ethane, 1,1,1-trifluoro-

16 OTHER INFORMATION**Revision Information**

Revision Date	30 MAR 2001	Revision Number	3
Supersedes Revision Dated	17-JUN-2000		

Revision Summary

revised typo in sect. 1

Key

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

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