



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

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3017FR FE-13
Revised 6-APR-2004

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

CAS Number : 75-46-7
Formula : CHF3

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-9442
Transport Emergency : CHEMTREC: 1-800-424-9300
Medical Emergency : 1-800-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
Trifluoromethane	75-46-7	100

HAZARDS IDENTIFICATION

Potential Health Effects

Inhalation may cause nonspecific discomfort such as nausea, headache, or weakness; temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, or unconsciousness; or with gross overexposure, possible temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation.

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.

FIRST AID MEASURES

First Aid

INHALATION

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

SKIN CONTACT

Flush with water. Treat for frostbite if necessary by gently warming affected areas.

EYE CONTACT

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

INGESTION

Ingestion is not considered a potential route of exposure.

Notes to Physicians

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life-threatening emergencies.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : Will not burn

Not a fire or explosion hazard.

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self-contained breathing apparatus (SCBA) and full protective equipment. Cool tank/container with water spray.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Wear self-contained breathing apparatus (SCBA) and full protective gear.

Accidental Release Measures

Material evaporates at atmospheric pressure (vaporizes). Ventilate area, especially low places where heavy vapors might collect. Remove open flames. Wear self-contained breathing apparatus (SCBA) for large spills or when a release occurs.

HANDLING AND STORAGE

Handling (Personnel)

Avoid contact of liquid with eyes and prolonged skin exposure. Use with sufficient ventilation to keep employee exposure below recommended limits.

Storage

Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do NOT drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Never attempt to lift cylinder by its cap. Use a pressure reducing regulator when connecting cylinder to lower pressure (>3000 psig) piping or systems. Do NOT heat cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Separate full containers from empty containers. Storage area temperatures should not exceed 125 deg F (52 deg C) and should be free of combustible materials. Avoid area where salt or other corrosive materials are present. Avoid excessive inventory and storage time. Use a first-in first-out system. Keep accurate inventory records.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low places.

Personal Protective Equipment

Impervious gloves should be used when handling liquid. Chemical splash goggles should be worn when handling liquid. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large spill or release occurs.

Exposure Guidelines

Exposure Limits

FE-13		
PEL (OSHA)	:	None Established
TLV (ACGIH)	:	None Established
AEL * (DuPont)	:	1000 ppm, 8 & 12 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point	:	-82.1 C (-115.8 F)
Vapor Pressure	:	686 psia at 25 deg C (77 deg F)
Vapor Density	:	2.4 (Air = 1)
% Volatiles	:	100 WT%
Solubility in Water	:	0.1 WT% @ 25 C (77 F)
Odor	:	Slight ethereal
Form	:	Compressed gas or liquefied gas
Color	:	Clear/Colorless
Density	:	1.44 g/cc at -82 deg C (-115.7 deg F)-Liquid

STABILITY AND REACTIVITY

Chemical Stability

Material is stable. However, avoid open flames and high temperatures.

Incompatibility with Other Materials

Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

Decomposition

Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming HF, COF₂, or CO. These materials are toxic and irritating. Contact should be avoided.

Polymerization

Polymerization will not occur.

Other Hazards

Incompatibility : No data available.
Decomposition : Decomposition products are hazardous.
FE-13 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming HF, COF₂, or CO.

TOXICOLOGICAL INFORMATION

Animal Data

FE-13:

Inhalation LC50, 4hr: >663,000 ppm in rats

FE-13 is untested for skin and eye irritancy, and for animal sensitization.

Effects from single high inhalation exposure to FE-13 include anaesthetic effects, and nonspecific effects such as weight loss were observed at concentrations >22%. No cardiac sensitization was observed in dogs after breathing 800,000 ppm for periods of 5-10 minutes following epinephrine challenge. In another test, dogs exposed to up to 30% or up to 50% (with additional oxygen), had no positive responses. No cardiac sensitization occurred in baboons exposed by inhalation to 10%, 30%, 50%, or 70% FE-13 before or after an epinephrine challenge; there was a dose-related decrease in heart rates and differences in respiratory rates during exposure.

(TOXICOLOGICAL INFORMATION - Continued)

No animal tests are available to define the carcinogenic hazards of FE-13. The maternal and developmental NOAEL was 50,000 ppm. FE-13 is not considered a unique developmental hazard to the conceptus. There were no developmental or reproductive effects.

Tests have shown that FE-13 does not produce genetic damage in bacterial or mammalian cell cultures. It has not produced genetic damage in tests on animals.

DISPOSAL CONSIDERATIONS

Waste Disposal

Reclaim by distillation. Dispose of in accordance with all Federal, State, and local regulations.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO/IATA
Proper Shipping Name : Trifluoromethane
Hazard Class : 2.2
UN No. : 1984
Label(s) : Nonflammable Gas

Shipping Containers

Ton Tanks.
Tank Trucks.
Cylinders.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : No
Reactivity : No
Pressure : Yes

(REGULATORY INFORMATION - Continued)

LISTS:

Extremely Hazardous Substance	-No
CERCLA Hazardous Substance	-No
Toxic Chemicals	-No

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating	
Health	: 1
Flammability	: 0
Reactivity	: 1

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

For further information see DuPont bulletin S-34.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS	: MSDS Coordinator
>	: DuPont Fluoroproducts
Address	: Wilmington, DE 19898
Telephone	: (800) 441-7515

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS