



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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2003FR "FREON" 13 Refrigerant  
Revised 9-MAY-1995  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"Freon" is a registered trademark of DuPont.

Corporate MSDS Number : DU001069  
Formula : CClF3  
Grade : REFRIGERANT

Tradenames and Synonyms

CHLOROTRIFLUOROMETHANE  
REFRIGERANT 13

Company Identification

MANUFACTURER/DISTRIBUTOR  
DuPont Fluoroproducts  
1007 Market Street  
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.  
302-774-1000)  
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.  
703-527-3887)  
Medical Emergency : 1-800-441-3637 (outside the U.S.  
302-774-1000)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
*METHANE, CHLOROTRIFLUORO- ("FREON" 13 REFRIGERANT)	75-72-9	100

\* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

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HAZARDS IDENTIFICATION  
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## Potential Health Effects

High concentrations may cause fatal heart irregularities. Vapors of FC-13 are heavier than air posing a hazard of asphyxia if trapped in enclosed or low places. At flame temperatures, this fluorocarbon may decompose to hydrogen fluoride which can be lethal at low concentrations. Frostbite may occur on skin or eye contact.

Skin or eye contact may include frostbite. There are no reports of human sensitization.

Inhalation may include temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or possibly with gross overexposure(> 20%), temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation.

Individuals with preexisting diseases of the cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

## 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.

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FIRST AID MEASURES  
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## First Aid

## INHALATION

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

## SKIN CONTACT

Flush with plenty of water. Treat for frostbite if necessary.

## EYE CONTACT

Immediately flush eyes with plenty of water. Call a physician.

## INGESTION

Ingestion is not considered a potential route of exposure.

## (FIRST AID MEASURES - Continued)

## Notes to Physicians

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution only in situations of emergency life support.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Flash Point : Will not burn  
Flammable limits in Air, % by Volume  
LEL : Not applicable  
UEL : Not applicable  
Autoignition : Not determined  
Autodecomposition : >800 C (>1472 F)

## Fire and Explosion Hazards:

Use water spray or fog to cool containers. Although cylinders are equipped with pressure and temperature relief devices, they may still rupture under fire conditions. Decomposition may occur.

## Extinguishing Media

Non-flammable. As appropriate for combustibles in area.

## Fire Fighting Instructions

Self-contained breathing apparatus (SCBA) is required if cylinders rupture or discharge under fire conditions.

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ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

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

## Accidental Release Measures

Ventilate area-especially low places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) for large spills.

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HANDLING AND STORAGE  
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## Handling (Personnel)

Avoid breathing vapors and liquid contact with the skin and eyes. Use with sufficient ventilation to keep employee exposure below recommended limits.

## Storage

Clean, dry area. Do not heat above 125 deg F.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Normal ventilation for standard 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

Lined neoprene gloves and chemical splash goggles should be used 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 spill occurs.

## Exposure Guidelines

## Exposure Limits

"FREON" 13 Refrigerant

PEL (OSHA) : None Established  
TLV (ACGIH) : None Established

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Boiling Point : -81.4 C (-114.5 F)  
Vapor Pressure : 485 psia @ 25 deg C (77 deg F)  
Vapor Density : 3.6 at 25 deg C (77 deg F) (Air = 1)  
% Volatiles : 100 WT%  
Evaporation Rate : >1 (CCl4 = 1)  
Solubility in Water : 0.009 WT% @ 25 C (77 F)  
pH : Neutral  
Odor : Slight ethereal  
Form : Gas  
Color : Clear, colorless

Liquid Density : 1.3 g/cc at -30 degC (-22 degF)

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STABILITY AND REACTIVITY  
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## Chemical Stability

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

## Polymerization

Polymerization will not occur.

## Other Hazards

Incompatibility : Alkali or alkaline earth metals - powdered  
Al, Zn, Be, etc.

Decomposition : "Freon" 13 can be decomposed by high  
temperatures (open flames, glowing metal  
surfaces, etc.) forming hydrochloric and  
hydrofluoric acids, and possible carbonyl  
halides.

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TOXICOLOGICAL INFORMATION  
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## Animal Data

Inhalation 2 hour LC50: > 600,000 ppm in rats

The compound is untested for skin or eye irritancy, and animal sensitization.

In Guinea pigs there was a slight narcotic effect as determined by loss of righting reflex during a 60 minute exposure to various concentrations by inhalation. Cardiac sensitization was observed in beagle dogs exposed to 800,000 ppm for 5 minutes and challenged with adrenalin for 10 seconds. Repeated exposures to concentrations as high as 200,000 ppm produced no adverse effects.

No animal test reports are available to define carcinogenic, developmental, or reproductive hazards. The compound does not produce genetic damage in bacterial cell cultures.

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Reclaim by distillation or remove to permitted waste disposal facility. Comply with Federal, State and Local regulations.

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TRANSPORTATION INFORMATION  
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## # Shipping Information

DOT/IMO  
Proper Shipping Name : CHLOROTRIFLUOROMETHANE  
Hazard Class : 2.2  
UN No. : 1022  
Special Information : IMO/ICAO LABEL

NONFLAMMABLE GAS

Shipping Containers

Cylinders

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REGULATORY INFORMATION  
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## 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

## LISTS:

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

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

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

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

(Continued)

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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