



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

Page 1

2007FR "FREON" 14 Refrigerant
Revised 29-APR-2004

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"FREON" is a registered trademark of DuPont.

Corporate MSDS Number : DU001071
Formula : CF4

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)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
TETRAFLUOROMETHANE ("FREON" 14 REFRIGERANT)	75-73-0	100

HAZARDS IDENTIFICATION

Potential Health Effects

Inhalation of high concentrations may cause fatal heart irregularities. Inhalation may cause nausea, headache, weakness, dizziness, confusion, incoordination and loss of consciousness. Vapors of "FC"-14 are heavier than air posing a hazard of asphyxia if they are trapped in enclosed or low places. At flame temperatures, this fluorocarbon can decompose to hydrogen fluoride which can be lethal at low concentrations. Frostbite may occur on skin or eye contact.

Skin or eye contact with liquid or escaping vapor may include frostbite. Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are no reports of human sensitization.

(HAZARDS IDENTIFICATION - Continued)

Inhalation of excessive concentrations may include temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Individuals with preexisting diseases of the central nervous 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.

FIRST AID MEASURES

First Aid

INHALATION

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

SKIN CONTACT

Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.

EYE CONTACT

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

INGESTION

Ingestion is not considered a potential route of exposure.

Notes to Physicians

THIS MATERIAL MAY MAKE THE HEART MORE SUSCEPTIBLE TO ARRHYTHMIAS. Catecholamines such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : Will not burn
Flammable limits in Air, % by Volume
LEL : Not applicable
UEL : Not applicable
Autoignition : >1100 C (>2012 F)

Fire and Explosion Hazards:

Cylinders are equipped with pressure and temperature relief devices but may still rupture under fire conditions.

Extinguishing Media

As appropriate for combustibles in the area.

Fire Fighting Instructions

Use water spray or fog to cool container. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or release under fire conditions.

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.

Accidental Release Measures

Ventilate area - especially low places where heavy vapors might collect. Remove open flames. For large releases, wear self-contained breathing apparatus (SCBA).

HANDLING AND STORAGE

Handling (Personnel)

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

Storage

Store in clean, dry area. Do not heat above 52 C (125 F).

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

Lined neoprene gloves should be used when transferring gas. Under normal manufacturing conditions no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines

Exposure Limits

"FREON" 14 Refrigerant

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

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point	: -127.9 C (-198.2 F)
Vapor Pressure	: 529 psig @ -45.6 C (-50.1 F) Critical Temperature (-50 degF) Critical Temp
Vapor Density	: 3.03 (Air=1.0)
% Volatiles	: 100 WT%
Solubility in Water	: 0.0015 WT% @ 25 C (77 F)
Odor	: None
Form	: Compressed gas
Color	: Clear, colorless
Liquid Density	: 1.317 g/cm ³ @ -80 C (-112 F)

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.

(STABILITY AND REACTIVITY - Continued)

Decomposition

"FREON" 14 Refrigerant decomposes at high temperatures (open flames, glowing metal surface, etc.) forming hydrofluoric acid.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Inhalation 15 minute ALC: 895,000 ppm in rats

The compound is untested for skin irritancy, but may freeze the skin on contact, and is untested for eye irritancy and for animal sensitization.

Single exposure by inhalation to concentrations of 80% caused hyperactivity, followed by decreased activity, tissue congestion, and closed eyes. Dogs exposed to concentrations of 20%-60% did exhibit preventricular contractions when challenged with an injection of epinephrine; however, no cardiac arrhythmias were observed. Repeated exposures to concentrations > 22% produced altered blood counts and lung inflammation in guinea pigs and rats.

No animal test reports are available to define carcinogenic, mutagenic, developmental, or reproductive hazards.

DISPOSAL CONSIDERATIONS

Waste Disposal

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

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO/IATA
Proper Shipping Name : TETRAFLUOROMETHANE, COMPRESSED
Hazard Class : 2.2
UN No. : 1982
Shipping Label : Nonflammable Gas

Shipping Containers:

(TRANSPORTATION INFORMATION - Continued)

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

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.

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