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

"FREON" 22
2008FR Revised 11-MAR-2010

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number	: DU000025
Formula	: CHClF2
Molecular Weight	: 86.47
CAS Name	: "FREON" 22

Tradenames and Synonyms

Freon 22
CHLORODIFLUOROMETHANE
HCFC-22
CC0335
Dymel 22

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	%
*"FREON" 22 METHANE, CHLORODIFLUORO-	75-45-6	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.

HAZARDS IDENTIFICATION

Potential Health Effects

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse or deliberate inhalation can be fatal. Vapors are heavier than air and pose a threat of suffocation if trapped in enclosed or low places. Liquid contact can cause frostbite. Inhalation may cause dizziness, headache, confusion, incoordination, and loss of consciousness.

Immediate effects of overexposure by inhalation may include central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Gross overexposure may cause irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Other effects include fatality from gross over-exposure.

Short-term overexposure by skin contact may cause frostbite, if liquid or escaping vapor contacts the skin. Repeated and/or prolonged exposure may cause defatting of the skin with itching, redness or rash. Data to evaluate the skin permeation hazard of this compound are insufficient. There are no reports of human sensitization.

Contact with the vapor or aerosol may cause eye irritation with tearing, pain or blurred vision.

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the central nervous system, cardiovascular system.

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

In case of contact, flush area with lukewarm water. Do not

(FIRST AID MEASURES - Continued)

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
Autodecomposition	: 632 C (1170 F)

Other burning materials may cause "FREON" 22 to burn weakly.

Chlorodifluoromethane is not flammable at ambient temperatures and atmospheric pressure. However, chlorodifluoromethane has been shown in tests to be combustible at pressures as low as 60 psig at ambient temperature when mixed with air at concentrations of 65 volume % air. Experimental data have also been reported which indicate combustibility of "FREON" 22 in the presence of certain concentrations of chlorine.

Fire and Explosion Hazards:

Cylinders may rupture under fire conditions. Decomposition may occur.

Extinguishing Media

As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning.

Fire Fighting Instructions

Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

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 or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) for large spills or releases.

HANDLING AND STORAGE

Handling (Personnel)

Use with sufficient ventilation to keep employee exposure below recommended limits. "FREON" 22 should not be mixed with air for leak testing. In general, it should not be used or allowed to be present with high concentrations of air above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.

Storage

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 or enclosed places.

Personal Protective Equipment

Impervious 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 large release occurs.

Exposure Guidelines

Exposure Limits
"FREON" 22

PEL	(OSHA)	: None Established
TLV	(ACGIH)	: 1,000 ppm, 3,540 mg/m3, 8 Hr. TWA, A4
AEL *	(DuPont)	: None Established

* 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	: -40.8 C (-41.4 F)
Vapor Pressure	: 151 psig @ 25 C (77 F)
Vapor Density	: 3.03 (Air=1.0) @ 25 C (77 F)
% Volatiles	: 100 WT%
Evaporation Rate	: >1 (CCl4=1.0)
Solubility in Water	: 0.3 WT% @ 25 C (77 F)
pH	: Neutral
Odor	: Slight ethereal
Form	: Liquified Gas.
Color	: Clear, Colorless.
Liquid Density	: 1.194 g/cm3 @ 25 C (77 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.

Decomposition

Decomposition products are hazardous. "FREON" 22 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides. These materials are toxic and irritating. Contact should be avoided.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

INHALATION:

4 hour, LC50, rat: 220,000 ppm.

Inhalation 4 hour, LC50, rat: 220,000 ppm

Single inhalation exposure to high doses caused central nervous depression, inactivity or anaesthesia, altered respiratory rate, and cardiac sensitization (a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine).

No data are available on acute oral or dermal toxicity for this substance.

Animal testing indicates this substance is not an eye irritant.

Animal testing indicates this substance is not a skin irritant or skin sensitizer.

Repeated inhalation exposure caused reduced body weight gain and organ weight effects. In chronic inhalation studies, an increased incidence of tumors was observed in some laboratory animals but not in others. The overall weight of evidence indicates that the substance is not carcinogenic.

Animal testing showed effects on embryo-fetal development at exposure levels equal to or above those causing maternal toxicity. This substance is not considered a unique developmental hazard to the conceptus. Evidence suggests the substance is not a reproductive toxin in animals.

Experiments showed the substance to cause mutagenic effects in cultured bacterial cells. The substance did not cause genetic damage in cultured mammalian cells. Evidence suggests this substance does not cause genetic damage in animals.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Aquatic Toxicity:

"FREON" 22

48 hour EC50 - Daphnia magna: 433 mg/L
96 hour LC50, Zebra fish: 777 mg/L

(ECOLOGICAL INFORMATION - Continued)

Biodegradation: according to the results of test of biodegradability, this substance is not readily biodegradable.

DISPOSAL CONSIDERATIONS

Waste Disposal

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

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO

Proper Shipping Name	: CHLORODIFLUOROMETHANE
Hazard Class	: 2.2
UN No.	: 1018
DOT/IMO Label	: NONFLAMMABLE GAS

Shipping Containers

Tank Cars.
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

HAZARDOUS CHEMICAL LISTS

SARA Extremely Hazardous Substance: No
CERCLA Hazardous Substance : No
SARA Toxic Chemical - See Components Section

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