

Master - D2A

DU PONT

IDENTIFICATION

NAME

FREON* 12 Fluorocarbon

CHEMICAL FAMILY

Halogenated Hydrocarbon

FORMULA

CCl₂F₂

TSCA INVENTORY STATUS

Reported/Included

MANUFACTURER/DISTRIBUTOR

E. I. du Pont de Nemours & Co. (Inc.)

SARA/TITLE III STATUS

See ADDITIONAL INFORMATION Section

ADDRESS

Wilmington, DE 19898

PRODUCT INFORMATION PHONE

(800) 441-9450

MEDICAL EMERGENCY PHONE

(800) 441-3637

TRANSPORTATION EMERGENCY PHONE

CHEMTREC (800) 424-9300

PHYSICAL DATA

BOILING POINT

-29.8°C (-21.6°F)

PERCENT VOLATILE BY VOLUME

100

LIQUID DENSITY

1.315 g/cc at 25°C (77°F)

VAPOR PRESSURE

94.5 psia at 25°C (77°F)

VAPOR DENSITY (Air = 1)

4.26 at 25°C (77°F)

SOLUBILITY IN WATER

0.028 wt. % at 1 atm & 25°C

pH INFORMATION

Neutral

APPEARANCE

Clear

FORM

Liquefied gas

ODOR

Slight ethereal

COLOR

Colorless

*Registered U.S. Pat. and Tm. Off., Du Pont Company. FREON^R 12 Fluorocarbon is made only by Du Pont.

E-94933-1 Date: 5/89

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.

HAZARDOUS COMPONENTS

<u>MATERIAL(S)</u>	<u>CAS NO.</u>	<u>APPROXIMATE %</u>
Methane, Dichlorodifluoro (FREON ^R 12 Fluorocarbon)	75-71-8	100

HAZARDOUS REACTIVITY

STABILITY

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

INCOMPATIBILITY

Alkali or alkaline earth metals—powdered Al, Zn, Be, etc.

DECOMPOSITION

FREON^R 12 Fluorocarbon can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids—possible carbonyl halides.

POLYMERIZATION

Will not occur.

FIRE AND EXPLOSION DATA

FLASH POINT

Will not burn.

FLAMMABLE LIMITS IN AIR, % BY V

LOWER Not applicable

UPPER Not applicable

AUTOIGNITION TEMPERATURE

Not determined

AUTODECOMPOSITION TEMPERATURE

>760°C (>1400°F)

FIRE AND EXPLOSION HAZARDS

Use water spray or fog to cool containers. Cylinders may rupture under fire conditions. Decomposition may occur.

EXTINGUISHING MEDIA

As appropriate for combustibles in area.

SPECIAL FIREFIGHTING INSTRUCTIONS

Self-contained breathing apparatus (SCBA) is required if cylinders rupture and contents are released under fire conditions.

HEALTH HAZARD INFORMATION

PRINCIPAL HEALTH HAZARDS (Including Significant Routes, Effects, Symptoms of Overexposure, and Medical Conditions Aggravated by Exposure)

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse can be fatal. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite. May cause eye irritation.

Inhalation 4-hour LC₅₀: 800,000 ppm in rats
Oral ALD: >1000 mg/kg in rats

The compound is not a skin irritant, is a mild eye irritant, and is untested for animal sensitization. Toxic effects described in animals from exposures by inhalation include central nervous system effects, and narcosis. Respiratory changes were observed in mice repeatedly exposed by inhalation to concentrations of 20,000 ppm or greater. Repeated exposure by ingestion caused slight liver effects and slight decrease in rate of weight gain. Animal testing indicates that this compound does not have carcinogenic, mutagenic, reproductive, or developmental effects. Concentrations of 5% and greater caused cardiac sensitization in dogs.

Human health effects of overexposure by eye contact with the vapor may include eye irritation with discomfort, tearing, or blurring of vision. Skin contact with the liquid may cause frostbite. Inhalation of the vapors may cause 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, or the effects of exclusion of oxygen with grossly excessive exposures. Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

CARCINOGENICITY

Not listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

EXPOSURE LIMITS

PEL (OSHA): 1000 ppm, 4950 mg/m³
TLV* (ACGIH): 1000 ppm, 4950 mg/m³

SAFETY PRECAUTIONS

Use with sufficient ventilation to keep employee exposure below recommended limits.

FIRST AID

IF HIGH CONCENTRATIONS ARE INHALED: Immediately remove to fresh air. Keep persons calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

IN CASE OF SKIN CONTACT: Flush with water. Treat for frostbite if necessary.

IN CASE OF EYE CONTACT: Immediately flush eyes with plenty of water. Call a physician.

IF SWALLOWED: Ingestion is not considered a potential route of exposure.

*TLV is a registered trademark of the American Conference of Governmental Industrial Hygienists.

HEALTH HAZARD INFORMATION (cont'd)

NOTE TO PHYSICIANS: Because of a possible disturbance of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution in situations of emergency life support.

PROTECTION INFORMATION

GENERALLY APPLICABLE CONTROL MEASURES

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 butyl 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.

DISPOSAL INFORMATION

SPILL, LEAK OR RELEASE

Ventilate area—especially low places where heavy vapors might collect. Remove open flames. Use SCBA for large spills.

WASTE DISPOSAL

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

SHIPPING INFORMATION

DOT (172.101)

PROPER SHIPPING NAME
Dichlorodifluoromethane

HAZARD CLASS
Nonflammable Gas

UN NO.
1028

DOT LABEL
Nonflammable Gas

DOT PLACARD
Nonflammable Gas

DOT/IMO (172.102)

PROPER SHIPPING NAME
Dichlorodifluoromethane

HAZARD CLASS
Nonflammable Gas, 2.2

UN NO.
1028

IMO/ICAO LABEL
Nonflammable Gas

SHIPPING INFORMATION (cont'd)

REPORTABLE QUANTITY

5000 lbs/2270 kg

SHIPPING CONTAINERS

Cylinders, ton tanks, tank cars.

ADDITIONAL INFORMATION

STORAGE CONDITIONS

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

NPCA-HMIS RATINGS

Health	1
Flammability	0
Reactivity	1
Personal Protection	-

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

SARA/TITLE III HAZARD CATEGORIES AND LISTS

Product Hazard Categories:

Chronic Health	- No
Acute Health	- Yes
Fire Hazard	- No
Pressure Hazard	- Yes
Reactivity Hazard	- No

Lists:

Extremely Hazardous Substances
CERCLA Hazardous Substances
Toxic Chemicals

DATE OF LATEST REVISION/REVIEW:

PERSON RESPONSIBLE FOR MSDS:

5/89

K. P. BROWN

Du Pont Company

Chemicals and Pigments Department

Chestnut Run Plaza

P.O. Box 80709

Wilmington, DE 19880-0709

(302) 999-5072