DuPont Chemicals

2022FR | Revised 7-OCT-1996 | Printed 31-OCT-1996

"FREON" 12

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification
"FREON" is a registered trademark of DuPont.

Corporate MSDS Number DU001065

Formula CCl2F2

Tradenames and Synonyms
CC0112

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	%
*	75-71-8	
*METHANE, DICHLORODIFLUORO- ("FREON" 12)		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.

(Continued)

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 may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite. May cause eye irritation.

HUMAN HEALTH EFFECTS:

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 anesthetic 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 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 high concentrations are 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 skin with water. Treat for frostbite if necessary by gently warming affected area.

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.

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FIRST AID MEASURES(Continued)

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

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point	Will not burn
Flammable limits in Air, % by Volume	
LEL	Not applicable
UEL	Not applicable
Autoignition	>750 C (>1382 F)

Fire and Explosion Hazards:

Cylinders may rupture under fire conditions. Decomposition may occur.

Extinguishing Media
As appropriate for combustibles in area.

Fire Fighting Instructions
Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) is required if cylinders rupture and contents are released 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 or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) for large spills.

HANDLING AND STORAGE

Handling (Personnel)
Use with sufficient ventilation to keep employee exposure below recommended limits.

Storage
Clean, dry area. Do not heat above 52 deg C (125 deg F).

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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

Applicable Exposure Limits

METHANE, DICHLORODIFLUORO- ("FREON" 12)	
PEL (OSHA)	1,000 ppm, 4,950 mg/m3, 8 Hr. TWA
TLV (ACGIH)	1,000 ppm, 4,950 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	-29.8 C (-21.6 F)
Vapor Pressure	94.5 psia at 25 deg C (77 deg F)
Vapor Density	4.26 (Air = 1.0) at 25 deg C (77 deg F)
% Volatiles	100 WT%
Solubility in Water	0.028 WT% @ 25 C (77 F) at 1 atm
pH	Neutral
Odor	Slight ethereal
Form	Liquified gas
Color	Clear, colorless
Density	1.315 g/cc at 25 deg C (77 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.

Polymerization
Polymerization will not occur.

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STABILITY AND REACTIVITY (Continued)

Other Hazards

Decomposition : Decomposition products are hazardous. "FREON" 12 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides.

TOXICOLOGICAL INFORMATION

Animal Data

Inhalation 30-minute LC50: 800,000 ppm in rats
Oral ALD : >1,000 mg/kg in rats

Effects in animals from single high exposure by inhalation include anesthesia and irregular heartbeat (cardiac arrythmias). Repeated inhalation exposures produced altered respiratory function. Long-term studies showed no significant clinical, blood chemistry or pathological effects following repeated exposures. The effects in animals from long-term ingestion of this material include slight alterations in blood chemistry and body weight gain. No other clinical, biochemical or pathological signs of toxicity have been observed.

Tests in animals demonstrate no carcinogenic activity and no developmental or reproductive toxicity. The compound does not produce heritable genetic damage in animals or genetic damage in bacterial and mammalian cell cultures.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

"FREON" 12: 48 hour EC50 - Daphnia magna: 95 mg/L.

DISPOSAL CONSIDERATIONS

Waste Disposal

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

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TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO	
Proper Shipping Name	DICHLORODIFLUOROMETHANE
Hazard Class	2.2
UN No.	1028
DOT/IMO Label	NONFLAMMABLE GAS

Shipping Containers

Tank Cars.

Cylinders
Ton Tanks
Reportable Quantity : 5,000 lbs./2,270 kg.

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 - Yes
SARA Toxic Chemical - See Components Section

Superfund reportable discharge = 5000 lb.

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.

(Continued)

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	: DuPont Chemicals
Address	: Engineering & Product Safety
>	: P.O. Box 80709, Chestnut Run
>	: Wilmington, DE 19880-0709
Telephone	: (302) 999-4946

# Indicates updated section.

End of MSDS