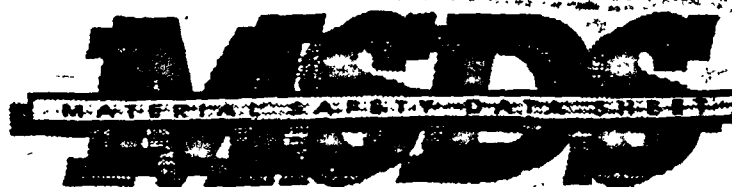




Du Pont Chemicals

2090FR



Revised 23-Sep-91

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"FREON" 11

MATERIAL IDENTIFICATION

Corporate Number DU000026

"FREON" is a registered trademark of Du Pont.

Manufacturer/Distributor Du Pont
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

Chemical Family HALOGENATED HYDROCARBON

Trade Names and Synonyms F-11
CC0119

Du Pont Registry Number DP22-97-3

Formula CCl₃F

Molecular Weight 137.38

TSCA Inventory Status Reported/Included

NPCA-HMIS Ratings
Hearth: 1
Flammability: 0
Reactivity: 1
Personal Protection rating to be supplied by user depending on use conditions.

COMPONENTS

Material	CAS Number	Percent
*METHANE, TRICHLOROFLUORO- ("FREON" 11)	75-69-4	100

* Regulated as a Toxic Chemical under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

(continued)

PHYSICAL DATA

Boiling Point	23.9°C (75°F)
Vapor Pressure	14.7 psia at 25 deg C (77 deg F)
Vapor Density	4.9 (Air = 1.0)
% Volatiles	100 WT %
Evaporation Rate	(CCl4 = 1.0) Greater than 1
Water Solubility	0.1 WT % at 25°C (77°F)
pH	Neutral
Odor	Slight ethereal
Form	Liquid
Color	Colorless
Density	1.48 g/cc at 25 deg C (77 deg F)
Appearance	: Clear



Instability	Stable. However, avoid open flames and high temperatures.
Incompatibility	Incompatible with alkali or alkaline earth metals- powdered Al, Zn, Be, etc.
Polymerization	Polymerization will not occur.
Decomposition	: Decomposition products are hazardous. "FREON" 11 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids and possibly carbonyl halides.

FIRE AND EXPLOSION DATA

Flash Point	Will not burn
Method	TOC
Flammable Limits in Air, % by Volume	LEL Not applicable UEL Not applicable
Autoignition	Not determined
Autodecomposition	>593°C (>1100°F)
Fire and Explosion Hazards	Drums may rupture under fire conditions. Decomposition may occur.
Extinguishing Media	As appropriate for combustibles in area.
Special Fire Fighting Instructions	Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are spilled under fire conditions.

(continued)

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 or deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Causes skin and eye irritation.

ANIMAL DATA:

Inhalation 4-hour LC50: 26,200 ppm in rats
Oral ALD : 3725 mg/kg in rats

The compound is not a skin irritant but is a mild eye irritant. Toxic effects in rats exposed by inhalation include central nervous system and anesthetic effects at high concentrations. Concentrations of 0.35% and higher caused cardiac sensitization in dogs. Various cardiovascular and circulatory abnormalities have also been reported in other animals. Changes in the lungs, liver, brain and spleen were observed in a study of rats exposed by inhalation to 12 times the TLV. In another study at 25 times the TLV, rats, guinea pigs, and cats exhibited no microscopic evidence of damage to the heart, lungs, kidney, liver or spleen. Exposures by ingestion or skin resulted in no evidence of toxicity in rats, dogs or rabbits.

HUMAN HEALTH EFFECTS:

Human health effects of overexposure by eye contact may include eye irritation with discomfort, tearing, or blurring of vision. Skin contact with the liquid may cause drying of the skin with repeated contact resulting in mild skin irritation with discomfort or rash. Overexposure by inhalation 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. Ingestion may include nonspecific discomfort, such as nausea, headache, or weakness.

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

Carcinogenicity

None of the components in this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

Applicable Exposure Limits

METHANE, TRICHLOROFLUORO- ("FREON" 11)

AEL* (Du Pont)	None Established
TLV (ACGIH)	1,000 ppm, 5,620 mg/m3 (Ceiling)
PEL (OSHA)	1,000 ppm, 5,600 mg/m3 (Ceiling)

* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

Safety Precautions

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

(continued)

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 skin contact, flush skin with plenty of water for 15 minutes. Get medical attention if irritation is present.

EYE CONTACT

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

INGESTION

If swallowed, no specific intervention is indicated as the compound is not likely to be hazardous by ingestion. However, consult a physician if necessary.

Notes to Physician

Because of possible disturbances 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 and Precautions

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 should be used to avoid prolonged or repeated exposure. Chemical splash goggles should be available for use as needed to prevent eye contact. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a spill occurs.

DISPOSAL INFORMATION

Aquatic Toxicity

"FREON" 11: 96-hour LC50, rainbow trout: 190 mg/L

Spill, Leak, or Release

NOTE: Review FIRE AND EXPLOSION HAZARDS and SAFETY PRECAUTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Ventilate area. Do not flush into sewers. Dike spill. Collect on absorbent material and transfer to steel drums for recovery or disposal. Use self-contained breathing apparatus (SCBA) for large spills. Comply with Federal, State and local regulations on reporting releases.

Waste Disposal

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

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SHIPPING INFORMATION

DOT

Proper Shipping Name	HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRICHLOROFLUOROMETHANE)
Hazard Class	ORM-E
UN/NA No.	NA 9188
Shipping Containers	Tank Car Tank Truck Drums Reportable Quantity : 5000 lbs/2270 kg "FREON" 11 IS NOT REGULATED AS A HAZARDOUS MATERIAL BY DOT, IMO OR ICAO IN CONTAINERS LESS THAN 5000 LBS.

STORAGE CONDITIONS

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

TITLE III HAZARD CLASSIFICATIONS

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	No

LISTS:

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

ADDITIONAL INFORMATION AND REFERENCES

"FREON" 11 contains very low levels of carbon tetrachloride and chloroform, chemicals known to the State of California to cause cancer.

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:

W. J. Brock
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Wilmington, DE 19880-0709
302-999-5072

* Indicates updated section.

End of MSDS