

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: FLUOROTRICHLOROMETHANE

TRADE NAMES/SYNONYMS:

MTG MSDS 36; FREON 11; F 11; FC 11; R 11; CFC 11; TRICHLOROMONOFUOROMETHANE;
FREON MF; REFRIGERANT 11; MONOFUOROTRICHLOROMETHANE; HALON 11;
TRICHLOROFLUOROCARBON; FLUOROCARBON-11; FLUOROCHLOROFORM; RCRA U121;
CCl3F; MAT09990; RTECS PB6125000

CHEMICAL FAMILY: halogenated hydrocarbons

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: FLUOROTRICHLOROMETHANE
CAS NUMBER: 75-69-4
PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: faint odor, sweet odor

MAJOR HEALTH HAZARDS: central nervous system depression

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, ringing in the ears, nausea, vomiting, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, tremors, loss of coordination, unconsciousness

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: irritation

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: no information on significant adverse effects

INGESTION:

SHORT TERM EXPOSURE: ingestion of a gas is unlikely

LONG TERM EXPOSURE: ingestion of a gas is unlikely

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider

downwind evacuation if material is leaking.

FLASH POINT: not flammable

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition or combustion products: acid halides, phosgene, halogenated compounds, fluorocarbons, hydrogen chloride, hydrogen fluoride, chlorine, carbonyl fluoride

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

FLUOROTRICHLOROMETHANE:

1000 ppm (5600 mg/m³) OSHA TWA

1000 ppm (5620 mg/m³) OSHA ceiling (vacated by 58 FR 35338, June 30, 1993)

1000 ppm ACGIH ceiling

1000 ppm (5600 mg/m³) NIOSH recommended ceiling

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear insulated gloves.

PROTECTIVE MATERIAL TYPES: rubber, neoprene

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

2000 ppm

Any supplied-air respirator.

Any self-contained breathing apparatus with a full facepiece.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: faint odor, sweet odor

MOLECULAR WEIGHT: 137.37

MOLECULAR FORMULA: C-C13-F

BOILING POINT: 74.7 F (23.7 C) @ 706 mmHg

FREEZING POINT: -168 F (-111 C)

VAPOR PRESSURE: 690 mmHg @ 20 C

VAPOR DENSITY (air=1): 5.04 @ 25 C

SPECIFIC GRAVITY (water=1): 1.494 @ 17.2 C (liquid)

WATER SOLUBILITY: 0.11%

PH: Not applicable

VOLATILITY: Not applicable

ODOR THRESHOLD: 28.0 mg/m³

EVAPORATION RATE: 63 (butyl acetate=1)

VISCOSITY: 0.43 mPa.s @ 20 C (liquid)

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, organic solvents

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: metals, combustible materials, acids

HAZARDOUS DECOMPOSITION:

Thermal decomposition or combustion products: acid halides, phosgene, halogenated compounds, fluorocarbons, hydrogen chloride, hydrogen fluoride, chlorine, carbonyl fluoride

Thermal decomposition products: acid halides, phosgene, halogenated compounds

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

FLUOROTRICHLOROMETHANE:

TOXICITY DATA: 13 pph/15 minute(s) inhalation-rat LC50

CARCINOGEN STATUS: ACGIH: A4 -Not Classifiable as a Human Carcinogen

ACUTE TOXICITY LEVEL:

Relatively Non-toxic: inhalation

TARGET ORGANS: central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: heart or cardiovascular disorders

ADDITIONAL DATA: Stimulants such as epinephrine may induce ventricular fibrillation. May cross react with similar compounds.

12. ECOLOGICAL INFORMATION

FATE AND TRANSPORT:

KOW: 0.403 (log = -0.396)

KOC: 97 (log = 1.99) estimated

HENRY'S LAW CONSTANT: 9.7 E -2

BIOCONCENTRATION: 0.29 (estimated from Kow)

ENVIRONMENTAL SUMMARY: Leaches through the soil or the sediment at a rapid rate. Accumulates very little in the bodies of living organisms. Highly volatile from water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U121.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Compressed gas, n.o.s. (FLUOROTRICHLOROMETHANE)

ID NUMBER: UN1956

HAZARD CLASS OR DIVISION: 2.2

LABELING REQUIREMENTS: 2.2



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Compressed gas, n.o.s. (FLUOROTRICHLOROMETHANE)

UN NUMBER: UN1956

CLASS: 2.2

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

FLUOROTRICHLOROMETHANE: 5000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65):

FLUOROTRICHLOROMETHANE

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: A.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): All components of this product are listed on the DSL.

16. OTHER INFORMATION

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