



**MATHESON
TRI-GAS**

ask. . The Gas Professionals™

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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: TRIFLUOROCHLOROETHYLENE

TRADE NAMES/SYNONYMS:

MTG MSDS 23; CHLOROTRIFLUOROETHYLENE; TRIFLUOROVINYL CHLORIDE; CTFE; GENETRON 1113; TRIFLUOROMONOCHELOROETHYLENE; TRIFLUOROCHLOROETHYLENE, INHIBITED; PLASKON MONOMER; KEL-F MONOMER; DAIFLON; TRITHENE; 1,1,2-TRIFLUORO-2-CHLOROETHYLENE; CFE; HALOCARBON 1113; UN 1082; C2CLF3; MAT24060; RTECS KV0525000

CHEMICAL FAMILY: halogenated, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TRIFLUOROCHLOROETHYLENE

CAS NUMBER: 79-38-9

PERCENTAGE: >99

COMPONENT: TRI-N-BUTYLAMINE

CAS NUMBER: 102-82-9

PERCENTAGE: <0.1

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=4 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: faint odor, sweet odor



MAJOR HEALTH HAZARDS: eye irritation, difficulty breathing

PHYSICAL HAZARDS: Flammable gas. May cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: nausea, vomiting, dizziness, suffocation, kidney damage, liver damage

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe)

LONG TERM EXPOSURE: no information on significant adverse effects

EYE CONTACT:

SHORT TERM EXPOSURE: irritation, blurred vision

LONG TERM EXPOSURE: no information on significant adverse effects

INGESTION:

SHORT TERM EXPOSURE: frostbite

LONG TERM EXPOSURE: no information on significant adverse effects

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

EYE CONTACT: Immediately 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: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

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. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. 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: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile).

FLASH POINT: -18 F (-28 C) (gas)

LOWER FLAMMABLE LIMIT: 8.4%

UPPER FLAMMABLE LIMIT: 38.7%

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

TRIFLUOROCHLOROETHYLENE:

No occupational exposure limits established.

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

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

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

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.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: faint odor, sweet odor

MOLECULAR WEIGHT: 116.47

MOLECULAR FORMULA: C₂-CL-F₃

BOILING POINT: -18 F (-28 C)

FREEZING POINT: -252 F (-158 C)

VAPOR PRESSURE: Not available

VAPOR DENSITY (air=1): 4.0

DENSITY: Not available

WATER SOLUBILITY: decomposes

PH: Not applicable

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

10. STABILITY AND REACTIVITY

REACTIVITY: Avoid contact with water or moisture. May explode on contact with water.

INCOMPATIBILITIES: halogens, combustible materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: acid halides

POLYMERIZATION: Polymerizes with evolution of heat. Avoid contact with incompatible materials.

11. TOXICOLOGICAL INFORMATION

TRIFLUOROCHLOROETHYLENE:

TOXICITY DATA: 1000 ppm/4 hour(s) inhalation-rat LC₅₀; 268 mg/kg oral-mouse LD₅₀

LOCAL EFFECTS:

Irritant: eye

ACUTE TOXICITY LEVEL:

Toxic: ingestion

Moderately Toxic: inhalation

TARGET ORGANS: liver, kidneys

12. ECOLOGICAL INFORMATION

Not available

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Trifluorochloroethylene, stabilized

ID NUMBER: UN1082

HAZARD CLASS OR DIVISION: 2.3

LABELING REQUIREMENTS: 2.3; 2.1

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: Forbidden

CARGO AIRCRAFT ONLY: Forbidden

ADDITIONAL SHIPPING DESCRIPTION: Toxic-Inhalation Hazard Zone C



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Trifluorochloroethylene, stabilized

UN NUMBER: UN1082

CLASS: 2.3; 2.1

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

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: Yes

FIRE: Yes

REACTIVE: Yes

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29 CFR 1910.119):

TRIFLUOROCHLOROETHYLENE: 10000 LBS TQ

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: ABD1

NATIONAL INVENTORY STATUS:

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

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDL): Not determined.

16. OTHER INFORMATION

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