

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: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

TRADE NAMES/SYNONYMS:

MTG MSDS 43; TRICHLOROTRIFLUOROETHANE; 1,1,2-TRIFLUORO-1,2,2-TRICHLOROETHANE; 1,1,2-TRICHLOROTRIFLUOROETHANE; 1,2,2-TRICHLOROTRIFLUOROETHANE; 1,1,2-TRIFLUOROTRICHLOROETHANE; ETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUORO-; ARCTON 63; FRIGEN 113TR; GENETRON 113; UCON 113; FREON 113; FREON 113TR; FLUOROCARBON 113; REFRIGERANT 113; C2CL3F3; MAT26370; RTECS KJ4000000

CHEMICAL FAMILY: halogenated, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

CAS NUMBER: 76-13-1

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

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



EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: sweet odor

MAJOR HEALTH HAZARDS: central nervous system depression, difficulty breathing

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: mild irritation, vomiting, irregular heartbeat, drowsiness, symptoms of drunkenness, suffocation, lung congestion

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: no information is available

INGESTION:

SHORT TERM EXPOSURE: same as effects reported in short term inhalation, diarrhea, irregular heartbeat, symptoms of drunkenness, bluish skin color

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: 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: Slight fire hazard.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

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. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: No data available.

AUTOIGNITION: 1256 F (680 C)

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Store in a tightly closed container. Store in a cool, dry place. Store in a well-ventilated area.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE:

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON TF):

1000 ppm (7600 mg/m³) OSHA TWA

1250 ppm (9590 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

1000 ppm ACGIH TWA

1250 ppm ACGIH STEL

1000 ppm (7600 mg/m³) NIOSH recommended TWA 10 hour(s)

1250 ppm (9500 mg/m³) NIOSH recommended STEL

VENTILATION: Based on available information, additional ventilation is not required. 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 appropriate chemical resistant gloves.

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: liquid

APPEARANCE: clear

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: sweet odor

MOLECULAR WEIGHT: 187.38

MOLECULAR FORMULA: C-F2-CL-C-CL2-F

BOILING POINT: 118 F (48 C)

FREEZING POINT: -33 F (-36 C)

VAPOR PRESSURE: 284 mmHg @ 20 C

VAPOR DENSITY (air=1): 6.47

SPECIFIC GRAVITY (water=1): 1.5635 @ 25 C

WATER SOLUBILITY: 0.017% @ 25 C

PH: Not available

VOLATILITY: 100%

ODOR THRESHOLD: 135 ppm

EVAPORATION RATE: 0.45 (acetone=1)

VISCOSITY: 0.497 cP @ 49 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, benzene

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: metals, combustible materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: halogenated compounds, oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE:

IRRITATION DATA: 500 mg open skin-rabbit mild; 500 mg/24 hour(s) skin-rabbit mild

TOXICITY DATA: 38000 ppm/4 hour(s) inhalation-rat LC50; 43 gm/kg oral-rat LD50

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

ACUTE TOXICITY LEVEL:

Slightly Toxic: inhalation

Relatively Non-toxic: ingestion

TARGET ORGANS: central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: heart or cardiovascular disorders, heart problems, respiratory disorders, skin disorders and allergies

REPRODUCTIVE EFFECTS DATA: Available.

ADDITIONAL DATA: Stimulants such as epinephrine may induce ventricular fibrillation.

12. ECOLOGICAL INFORMATION

Not available

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

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: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON TF)

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

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:

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

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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