

# 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: 1,1,1-TRICHLORO-2,2,2-TRIFLUOROETHANE**

**TRADE NAMES/SYNONYMS:**

MTG MSDS 159; ETHANE, 1,1,1-TRICHLORO-2,2,2-TRIFLUORO-; 1,1,1-TRICHLOROTRIFLUOROETHANE; 1,1,1-TRIFLUOROTRICHLOROETHANE; FREON FT; C2Cl3F3; MAT26375; RTECS KJ3975000

**CHEMICAL FAMILY:** halogenated, aliphatic

**CREATION DATE:** Mar 29 1989

**REVISION DATE:** Dec 11 2008

---

## 2. COMPOSITION, INFORMATION ON INGREDIENTS

---

**COMPONENT:** 1,1,1-TRICHLORO-2,2,2-TRIFLUOROETHANE  
**CAS NUMBER:** 354-58-5  
**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:** faint odor, sweet odor

**MAJOR HEALTH HAZARDS:** No significant target effects reported.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** dizziness

**LONG TERM EXPOSURE:** no information is available

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** no information on significant adverse effects

**LONG TERM EXPOSURE:** no information on significant adverse effects

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** no information is available

**LONG TERM EXPOSURE:** no information is available

**INGESTION:**

**SHORT TERM EXPOSURE:** symptoms of drunkenness

**LONG TERM EXPOSURE:** no information is available

---

## 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.

**NOTE TO PHYSICIAN:** For inhalation, consider oxygen.

---

## 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.

---

## 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:**

#### **1,1,1-TRICHLORO-2,2,2-TRIFLUOROETHANE:**

No occupational exposure limits established.

**VENTILATION:** Provide local exhaust or process enclosure 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 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.

Any supplied-air respirator with a full facepiece that is operated in a 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.

#### **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:** liquid  
**COLOR:** colorless  
**PHYSICAL FORM:** volatile liquid  
**ODOR:** faint odor, sweet odor  
**MOLECULAR WEIGHT:** 187.38  
**MOLECULAR FORMULA:** C-F<sub>3</sub>-C-CL<sub>3</sub>  
**BOILING POINT:** 115 F (46 C)  
**FREEZING POINT:** 57 F (14 C)  
**VAPOR PRESSURE:** Not available  
**VAPOR DENSITY:** Not available  
**SPECIFIC GRAVITY (water=1):** 1.5790  
**WATER SOLUBILITY:** insoluble  
**PH:** Not available  
**VOLATILITY:** Not available  
**ODOR THRESHOLD:** Not available  
**EVAPORATION RATE:** Not available  
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available  
**SOLVENT SOLUBILITY:**  
**Soluble:** alcohol, ether, chloroform

---

## 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

---

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

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

**ACUTE TOXICITY LEVEL:**

Relatively Non-toxic: inhalation

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** heart problems

**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: No

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

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

**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/NDL):** Not determined.

---

**16. OTHER INFORMATION**

---

“RTECS®” is a United States trademark owned and licensed under authority of the U.S. Government, by and through Symyx Software, Inc. Portions ©Copyright 2001, U.S. Government. All rights reserved.

©Copyright 1984-2009 ChemADVISOR, Inc. All rights reserved.

**MATHESON TRI-GAS, INC. MAKES NO EXPRESS OR IMPLIED WARRANTIES, GUARANTEES OR REPRESENTATIONS REGARDING THE PRODUCT OR THE INFORMATION HEREIN, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR USE. MATHESON TRI-GAS, INC. SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY, PROPERTY OR OTHER DAMAGES OF ANY NATURE, WHETHER COMPENSATORY, CONSEQUENTIAL, EXEMPLARY, OR OTHERWISE, RESULTING FROM ANY PUBLICATION, USE OR RELIANCE UPON THE INFORMATION HEREIN.**