



# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MATHESON TRI-GAS, INC.**  
**959 ROUTE 46 EAST**  
**PARSIPPANY, NEW JERSEY 07054-0624**

**EMERGENCY CONTACT:**  
**CHEMTREC 1-800-424-9300**  
**INFORMATION CONTACT:**  
**973-257-1100**

**SUBSTANCE: TETRAFLUOROMETHANE**

**TRADE NAMES/SYNONYMS:**

MTG MSDS 40; CARBON TETRAFLUORIDE; CARBON FLUORIDE (CF<sub>4</sub>); CARBON FLUORIDE; FC 14; PERFLUOROMETHANE; R 14; R 14 (REFRIGERANT); METHANE, TETRAFLUORO-; FREON 14; TETRAFLUOROCARBON; UN 1982; CF<sub>4</sub>; MAT23000; RTECS FG4920000

**CHEMICAL FAMILY:** halogenated, aliphatic

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Dec 15 2003

## 2. COMPOSITION, INFORMATION ON INGREDIENTS

**COMPONENT:** TETRAFLUOROMETHANE

**CAS NUMBER:** 75-73-0

**PERCENTAGE:** 100.0

## 3. HAZARDS IDENTIFICATION

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

**EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** gas

**ODOR:** odorless

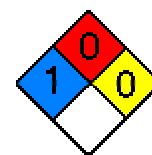
**MAJOR HEALTH HAZARDS:** difficulty breathing

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

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** nausea, vomiting, symptoms of drunkenness, disorientation, suffocation



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

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** irritation

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

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** frostbite

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

**INGESTION:**

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

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

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## 4. FIRST AID MEASURES

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**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:** 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:** Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

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

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

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## 5. FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Negligible fire hazard.

**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.

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## 6. ACCIDENTAL RELEASE MEASURES

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### **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.

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## 7. HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

#### **TETRAFLUOROMETHANE:**

No occupational exposure limits established.

**VENTILATION:** Based on available information, additional ventilation is not required. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

**GLOVES:** Wear insulated gloves.

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

Any powered, air-purifying respirator with a full facepiece and organic vapor and acid gas cartridge(s).

Any chemical cartridge respirator with a full facepiece and organic vapor and acid gas cartridge(s).

#### **For Unknown Concentrations or Immediately Dangerous to Life or Health -**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** gas

**COLOR:** colorless

**ODOR:** odorless  
**MOLECULAR WEIGHT:** 88.01  
**MOLECULAR FORMULA:** C-F4  
**BOILING POINT:** -198 F (-128 C)  
**FREEZING POINT:** -305 F (-187 C)  
**VAPOR PRESSURE:** 799 mmHg @ -127 C  
**VAPOR DENSITY (air=1):** 3.05  
**SPECIFIC GRAVITY (water=1):** 1.89 @ -183 C  
**WATER SOLUBILITY:** 0.0015% @ 25 C  
**PH:** Not applicable  
**VOLATILITY:** Not applicable  
**ODOR THRESHOLD:** Not available  
**EVAPORATION RATE:** Not applicable  
**VISCOSITY:** 0.170 cP @ -60 C  
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not applicable

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## 10. STABILITY AND REACTIVITY

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**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

**HAZARDOUS DECOMPOSITION:**  
Thermal decomposition products: halogenated compounds

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**TETRAFLUOROMETHANE:**  
**ACUTE TOXICITY LEVEL:** Insufficient Data.

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## 12. ECOLOGICAL INFORMATION

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Not available

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## 13. DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations.

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## 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:****PROPER SHIPPING NAME:** Tetrafluoromethane**ID NUMBER:** UN1982**HAZARD CLASS OR DIVISION:** 2.2**LABELING REQUIREMENTS:** 2.2**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:****SHIPPING NAME:** Tetrafluoromethane, compressed**UN NUMBER:** UN1982**CLASS:** 2.2

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## 15. REGULATORY INFORMATION

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**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 355.30):** Not regulated.**SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):** Not regulated.**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):**

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: Yes

**SARA TITLE III SECTION 313 (40 CFR 372.65):** Not regulated.**OSHA PROCESS SAFETY (29CFR1910.119):** 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/NDL):** Not determined.

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## 16. OTHER INFORMATION

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