

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**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: SILICON TETRACHLORIDE**

#### **TRADE NAMES/SYNONYMS:**

MTG MSDS 149; SILICON CHLORIDE; TETRACHLOROSILANE; TETRACHLOROSILICON; STCC 4932370; UN 1818; Cl4Si; MAT20750; RTECS VW0525000

**CHEMICAL FAMILY:** inorganic, silicon, halides

**PRODUCT USE:** industrial

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Dec 11 2008

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## 2. COMPOSITION, INFORMATION ON INGREDIENTS

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**COMPONENT:** SILICON TETRACHLORIDE

**CAS NUMBER:** 10026-04-7

**PERCENTAGE:** 100.0

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## 3. HAZARDS IDENTIFICATION

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**NFPA RATINGS (SCALE 0-4):** HEALTH=3 FIRE=0 REACTIVITY=2



#### **EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** fuming liquid

**ODOR:** irritating odor

**MAJOR HEALTH HAZARDS:** respiratory tract burns, skin burns, eye burns, mucous membrane burns

**PHYSICAL HAZARDS:** May react on contact with air, heat, light or water.

#### **POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** burns, difficulty breathing, lung congestion

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

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** burns

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

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** irritation (possibly severe), blurred vision

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

**INGESTION:**

**SHORT TERM EXPOSURE:** burns, nausea, vomiting, diarrhea, stomach pain

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

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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:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

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

**INGESTION:** If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention.

**NOTE TO PHYSICIAN:** For inhalation, consider oxygen. Avoid gastric lavage or emesis.

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## 5. FIRE FIGHTING MEASURES

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

**EXTINGUISHING MEDIA:** Small fires: carbon dioxide, regular dry chemical, dry sand, alcohol-resistant foam

Large fires: water spray or fog, alcohol-resistant foam

**FIRE FIGHTING:** Do not get water inside container. Do not scatter spilled material with high-pressure water streams. 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.

**FIRE FIGHTING PROTECTIVE EQUIPMENT:** Wear full protective fire fighting gear including self

contained breathing apparatus (SCBA) for protection against possible exposure.

**FLASH POINT:** Not available

**LOWER FLAMMABLE LIMIT:** Not available

**UPPER FLAMMABLE LIMIT:** Not available

**AUTOIGNITION:** Not available

**HAZARDOUS COMBUSTION PRODUCTS:**

Thermal decomposition or combustion products: hydrogen chloride, oxides of silicon

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## 6. ACCIDENTAL RELEASE MEASURES

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**OCCUPATIONAL RELEASE:**

Avoid contact with combustible materials. Do not touch spilled material. Do not get water inside container. Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Only personnel trained for the hazards of this material should perform clean up and disposal. Dike for later disposal. Do not use water. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

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## 7. HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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**EXPOSURE LIMITS:**

**SILICON TETRACHLORIDE:**

1 ppm AIHA WEEL ceiling

**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.

Any chemical cartridge respirator with acid gas cartridge(s).

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

Any air-purifying respirator with a full facepiece and an acid gas canister.

**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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**APPEARANCE:** clear

**COLOR:** colorless

**PHYSICAL FORM:** fuming liquid

**ODOR:** irritating odor

**MOLECULAR WEIGHT:** 169.89

**MOLECULAR FORMULA:** Si-Cl<sub>4</sub>

**BOILING POINT:** 136 F (58 C)

**FREEZING POINT:** -94 F (-70 C)

**DECOMPOSITION POINT:** Not available

**VAPOR PRESSURE:** 100 kPa @ 57.3 C

**VAPOR DENSITY:** Not available

**SPECIFIC GRAVITY (water=1):** 1.5

**WATER SOLUBILITY:** decomposes

**PH:** Not available

**VOLATILITY:** Not available

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** Not available

**VISCOSITY:** Not available

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

**SOLVENT SOLUBILITY:**

**Soluble:** benzene, ether, chloroform, petroleum ether, carbon tetrachloride

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** Reacts violently with water. Releases corrosive gases.

**CONDITIONS TO AVOID:** Avoid contact with combustible materials. Keep dry. Dangerous gases may accumulate in confined spaces. Keep out of water supplies and sewers.

**INCOMPATIBILITIES:** combustible materials, metals

**HAZARDOUS DECOMPOSITION:**

Decomposition products on contact with water or moisture: hydrogen chloride, siloxanes  
Thermal decomposition or combustion products: hydrogen chloride, oxides of silicon

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**SILICON TETRACHLORIDE:**

**IRRITATION DATA:** 500 mg/24 hour(s) skin-rabbit severe; 20 mg/24 hour(s) eyes-rabbit moderate

**TOXICITY DATA:** 8000 ppm/4 hour(s) inhalation-rat LC50

**LOCAL EFFECTS:**

Corrosive: inhalation, skin, eye, ingestion

**ACUTE TOXICITY LEVEL:**

Slightly Toxic: inhalation

**TARGET ORGANS:** respiratory system, skin, eyes, teeth

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** respiratory disorders, skin disorders, eye disorders

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## 12. ECOLOGICAL INFORMATION

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**ECOTOXICITY DATA:**

**FISH TOXICITY:** No data available.

**INVERTEBRATE TOXICITY:** No data available.

**ALGAL TOXICITY:** No data available.

**FATE AND TRANSPORT:**

**BIODEGRADATION:** No data available.

**OTHER ECOLOGICAL INFORMATION:** Contact with water releases hydrogen chloride gas and hydrochloric acid. May decrease the pH of waterways and adversely affect aquatic life.

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## 13. DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.  
Hazardous Waste Number(s): D003.

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## 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:**  
**PROPER SHIPPING NAME:** Silicon tetrachloride  
**ID NUMBER:** UN1818  
**HAZARD CLASS OR DIVISION:** 8  
**PACKING GROUP:** II  
**LABELING REQUIREMENTS:** 8

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**  
**SHIPPING NAME:** Silicon tetrachloride  
**UN NUMBER:** UN1818  
**CLASS:** 8  
**PACKING GROUP/CATEGORY:** II

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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 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: Yes

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:** E.

### NATIONAL INVENTORY STATUS:

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

**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

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## 16. OTHER INFORMATION

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### MSDS SUMMARY OF CHANGES

5. FIRE FIGHTING MEASURES

15. REGULATORY INFORMATION

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