

# MATERIAL SAFETY DATA SHEET

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## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**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: SULFUR TETRAFLUORIDE**

**TRADE NAMES/SYNONYMS:**

MTG MSDS 82; (T-4)-SULFUR FLUORIDE (SF4); SULFUR FLUORIDE (SF4);  
TETRAFLUOROSULFURANE; UN 2418; MAT22330; RTECS WT4800000

**CHEMICAL FAMILY:** halogens

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Mar 19 2003

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## SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

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**COMPONENT:** SULFUR TETRAFLUORIDE  
**CAS NUMBER:** 7783-60-0  
**PERCENTAGE:** 100.0

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## SECTION 3 HAZARDS IDENTIFICATION

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

**EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** gas

**MAJOR HEALTH HAZARDS:** potentially fatal if inhaled, respiratory tract burns, skin burns, eye burns

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

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** irritation (possibly severe), lung congestion, death

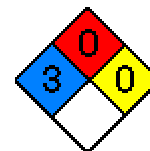
**LONG TERM EXPOSURE:** difficulty breathing, lung damage

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** irritation (possibly severe), frostbite

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

**EYE CONTACT:**



**SHORT TERM EXPOSURE:** irritation (possibly severe)

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

**INGESTION:**

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

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

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## **SECTION 4 FIRST AID MEASURES**

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**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 immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes 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 a large amount is swallowed, get medical attention.

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## **SECTION 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:** Do not get water inside container. 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. Keep unnecessary people away, isolate hazard area and deny entry.

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## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

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**OCCUPATIONAL RELEASE:**

Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Do not get water inside container. Keep unnecessary people away, isolate hazard area and deny entry. Small spills: Flood with water. Large spills: Dike for later disposal. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

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## **SECTION 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. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30).

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## SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

#### **SULFUR TETRAFLUORIDE:**

0.1 ppm (0.4 mg/m<sup>3</sup>) OSHA ceiling (vacated by 58 FR 35338, June 30, 1993)

0.1 ppm ACGIH ceiling

0.1 ppm (0.4 mg/m<sup>3</sup>) NIOSH recommended ceiling

**VENTILATION:** Provide local exhaust or process enclosure 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 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 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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## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** gas

**COLOR:** colorless

**ODOR:** Not available

**MOLECULAR WEIGHT:** 108.06

**MOLECULAR FORMULA:** F<sub>4</sub>-S

**BOILING POINT:** -40 F (-40 C)

**FREEZING POINT:** -191 F (-124 C)

**VAPOR PRESSURE:** Not available

**VAPOR DENSITY:** Not available

**SPECIFIC GRAVITY (water=1):** 1.95 @ -78 C

**WATER SOLUBILITY:** reacts violently

**PH:** Not applicable

**VOLATILITY:** Not applicable

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** Not applicable

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

**SOLVENT SOLUBILITY:**

**Soluble:** benzene

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## SECTION 10 STABILITY AND REACTIVITY

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**REACTIVITY:** Contact with water or moist air may form flammable and/or toxic gases or vapors.

**CONDITIONS TO AVOID:** Minimize contact with material. Avoid inhalation of material or combustion by-products. Containers may rupture or explode if exposed to heat.

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: acid halides, oxides of sulfur

**POLYMERIZATION:** Will not polymerize.

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## SECTION 11 TOXICOLOGICAL INFORMATION

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**SULFUR TETRAFLUORIDE:**

**LOCAL EFFECTS:**

Corrosive: inhalation, skin, eye

**ACUTE TOXICITY LEVEL:** Insufficient Data.

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## SECTION 12 ECOLOGICAL INFORMATION

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Not available

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## SECTION 13 DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations.

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## SECTION 14 TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:**

**PROPER SHIPPING NAME:** Sulfur tetrafluoride

**ID NUMBER:** UN2418

**HAZARD CLASS OR DIVISION:** 2.3

**LABELING REQUIREMENTS:** 2.3; 8



**QUANTITY LIMITATIONS:**

**PASSENGER AIRCRAFT OR RAILCAR:** Forbidden

**CARGO AIRCRAFT ONLY:** Forbidden

**ADDITIONAL SHIPPING DESCRIPTION:** Toxic-Inhalation Hazard Zone A

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Sulphur tetrafluoride

**UN NUMBER:** UN2418

**CLASS:** 2.3; 8

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**SECTION 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):**

**SULFUR TETRAFLUORIDE:** 100 LBS TPQ

**SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):**

**SULFUR TETRAFLUORIDE:** 100 LBS RQ

**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):**

**SULFUR TETRAFLUORIDE:** 250 LBS TQ

**STATE REGULATIONS:**

**California Proposition 65:** Not regulated.

**CANADIAN REGULATIONS:**

**WHMIS CLASSIFICATION:** ABD1EF

**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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**SECTION 16 OTHER INFORMATION**

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