

# 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: 1,1,2,2-TETRAMETHYLDISILANE**

**TRADE NAMES/SYNONYMS:**  
C4H14Si2; 00232945

**CREATION DATE:** Mar 28 2008  
**REVISION DATE:** Dec 11 2008

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## 2. COMPOSITION, INFORMATION ON INGREDIENTS

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**COMPONENT:** 1,1,2,2-TETRAMETHYLDISILANE  
**CAS NUMBER:** 814-98-2  
**PERCENTAGE:** >95

**COMPONENT:** 1,1,1,2-TETRAMETHYLDISILANE  
**CAS NUMBER:** Not assigned.  
**PERCENTAGE:** <5

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## 3. HAZARDS IDENTIFICATION

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



**EMERGENCY OVERVIEW:**

**PHYSICAL FORM:** liquid

**MAJOR HEALTH HAZARDS:** eye irritation

**PHYSICAL HAZARDS:** Extremely flammable liquid and vapor. Vapor may cause flash fire.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** irritation

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

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** irritation

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

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** irritation

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

**INGESTION:**

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

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

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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. 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.

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## 5. FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

**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. Dike for later disposal. Do not scatter spilled material with high-pressure water streams. 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). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**FLASH POINT:** -15 F (-26 C) (COC)

**FLAMMABILITY CLASS (OSHA):** IB

**HAZARDOUS COMBUSTION PRODUCTS:**

Thermal decomposition or combustion products: oxides of carbon, oxides of silicon, hydrogen, formaldehyde

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**6. ACCIDENTAL RELEASE MEASURES**

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**OCCUPATIONAL RELEASE:**

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

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**7. HANDLING AND STORAGE**

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Store under an inert atmosphere. Store in a tightly closed container. Avoid heat, flames, sparks and other sources of ignition. Store in a cool, dry place. Store at -20 C. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. See original container for storage recommendations. Keep separated from incompatible substances.

**HANDLING:** Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Avoid repeated or prolonged contact.

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**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

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**EXPOSURE LIMITS:**

**1,1,2,2-TETRAMETHYLDISILANE:**

No occupational exposure limits established.

**VENTILATION:** Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. 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.

**PROTECTIVE MATERIAL TYPES:** rubber, neoprene, nitrile

**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 organic vapor cartridge(s).

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

Any air-purifying respirator with a full facepiece and an organic vapor 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

**ODOR:** Not available

**MOLECULAR WEIGHT:** 188.33

**MOLECULAR FORMULA:** C<sub>4</sub>-H<sub>14</sub>-Si<sub>2</sub>

**BOILING POINT:** 187-189 F (86-87 C)

**FREEZING POINT:** -135 F (-93 C)

**VAPOR PRESSURE:** 194.8 mmHg @ 27 C

**VAPOR DENSITY (air=1):** >1

**SPECIFIC GRAVITY (water=1):** 0.720

**DENSITY:** 0.715 g/cc

**WATER SOLUBILITY:** insoluble

**PH:** Not available

**VOLATILITY:** >95%

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** >1 (butyl acetate=1)

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

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

**INCOMPATIBILITIES:** alkalis, oxidizing materials, metal salts, chlorine, bromine

**HAZARDOUS DECOMPOSITION:**

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

formaldehyde

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**1,1,2,2-TETRAMETHYLDISILANE:**

**LOCAL EFFECTS:**

Irritant: eye

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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:** Flammable liquids, n.o.s. (1,1,2,2-TETRAMETHYLDISILANE)

**ID NUMBER:** UN1993

**HAZARD CLASS OR DIVISION:** 3

**PACKING GROUP:** II

**LABELING REQUIREMENTS:** 3



**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Flammable liquid, n.o.s. (1,1,2,2-TETRAMETHYLDISILANE)

**UN NUMBER:** UN1993

**CLASS:** 3

**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: Yes

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:** B2.

**NATIONAL INVENTORY STATUS:**

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

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

**CANADA INVENTORY (DSL/NDSL):** Listed on NDSL.

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**16. OTHER INFORMATION**

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