



# Material Safety Data Sheet

## 1. Product and Company Identification

Product name : **Silicon Tetrafluoride**

Chemical formula : SiF<sub>4</sub>

Synonyms : Tetrafluorosilane; Silane, Tetrafluoro-; Silicon Fluoride; Perfluorosilane; UN 1859

Company : Med Tech Gases, Inc.  
20 Hall Street  
Medford, MA 02155

Telephone : 800-FINE-GAS

Emergency : 800-424-9300

## 2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Silicon tetrafluoride	7783-61-1	100%

### Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:  
Fluorides.

## 3. Hazards Identification

### Emergency Overview

Reacts violently with water, releasing toxic gases. Releases corrosive gases. Pressurized containers may rupture or explode if exposed to heat.

May cause respiratory tract burns, skin burns, eye burns, mucous membrane burns.

### Potential Health Effects

Inhalation : Burns.  
Eye contact : Burns.  
Skin contact : Burns.  
Ingestion : Ingestion of a harmful amount is unlikely.  
Chronic Health Hazard : None known.

## 4. First Aid Measures

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. Then 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.

Ingestion : If swallowed, drink plenty of water. Do NOT induce vomiting. Get immediate medical attention.

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.

Note to physicians : For inhalation, consider oxygen.  
For skin contact, consider ice water bath, iced alcohol, iced magnesium sulfate, magnesium oxide/glycerin gels, calcium gluconate gel or benzalkonium chloride solution.  
Avoid gastric lavage or emesis.

## 5. Fire-Fighting Measures

Suitable extinguishing media : Regular dry chemical, carbon dioxide.  
Large fires: Use regular foam or flood with fine water spray.

Specific hazards : Negligible fire hazard. Pressurized containers may rupture or explode if exposed to sufficient heat.

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. Use extinguishing agents appropriate for surrounding fire. Flood with fine water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Protective Equipment and Precautions for firefighters : Wear full protective fire fighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

## 6. Accidental Release Measures

Occupational spill/release : Do not touch spilled material. 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. Keep unnecessary people away, isolate hazard area and deny entry.

Additional advice : None.

## 7. Handling and Storage

### Handling

Do not breathe gas, fumes, vapor or spray. When using, do not eat, drink or smoke.

### Storage

Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Store in accordance with all current regulations and standards. Store below 52°C. Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances. Protect from sunlight.

## 8. Exposure Controls / Personal Protection

### Exposure limits

ACGIH : 2.5 mg/m<sup>3</sup> TWA (as F)  
OSHA (final) : 2.5 mg/m<sup>3</sup> TWA (as F)  
OSHA (vacated) : 2.5 mg/m<sup>3</sup> TWA

### Component Biological Limit Values

ACGIH : Fluorides in urine: 3 mg/g creatinine, prior to shift (B, Ns); Fluorides in urine: 10 mg/g creatinine, end of shift (B, Ns).

### IDLH

500 mg/m<sup>3</sup>

### Engineering measures/Ventilation

Ensure compliance with applicable exposure limits. Provide local exhaust or process enclosure ventilation system.

### Personal protective equipment

- Respiratory protection : 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.  
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.
- Hand protection : Wear appropriate chemical resistant gloves.
- 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.
- Skin and body protection : Wear appropriate chemical resistant clothing.

## **9. Physical and Chemical Properties**

- Form : Gas.
- Color : Colorless.
- Odor : Irritating, pungent odor.
- Molecular weight : 104.09
- Vapor pressure : Not available.
- Vapor density : 3.63 (air = 1)
- Boiling point : -86°C
- Melting point : -90°C
- Water solubility : Hydrolyzes.
- Specific gravity : 1.7 @ -95°C
- Solvent solubility : Soluble: Absolute alcohol, hydrofluoric acid.  
Insoluble: ether.

## **10. Stability and Reactivity**

- Stability : Reacts violently with water, releasing toxic gases. Releases corrosive gases.
- Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition. May ignite or explode on contact with combustible materials.
- Materials to avoid : Acids, metal salts, bases, alcohols, oxidizing materials.  
Water or Moisture: acids, hydrogen fluoride.
- Hazardous decomposition products : Not available.

## **11. Toxicological Information**

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

### Acute Toxicity Level

- SILICON : Moderately toxic: Inhalation.
- TETRAFLUORIDE

(7783-61-1)

Component Carcinogenicity

ACGIH : A4 – Not Classifiable as a Human Carcinogen.

Local Effects

SILICON : Corrosive: Inhalation, skin, eye, ingestion.  
TETRAFLUORIDE  
(7783-61-1)

Medical Conditions Aggravated by Exposure

SILICON : Central nervous system disorders, bone, joint or tooth disorders, eye disorders,  
TETRAFLUORIDE kidney disorders, respiratory disorders, skin disorders and allergies.  
(7783-61-1)

Additional Data

May cross the placenta. May be excreted in breast milk.

**12. Ecological Information**

No LOLI ecotoxicity data are available for this product's components.

**13. Disposal Considerations**

Waste from residues : Dispose in accordance with all applicable regulations. Subject to disposal  
/ unused products regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003.  
Contaminated : Return cylinder to supplier.  
packaging

**14. Transport Information**

DOT (US only)

Proper shipping name : Silicon tetrafluoride  
Class : 2.3, 8  
UN/ID No. : UN1859  
Labeling : Poison Gas, Corrosive  
Additional Info : Toxic-Inhalation Hazard Zone B

**15. Regulatory Information**

U.S. Federal Regulations

None of this product's components are listed under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute: Yes  
Chronic: Yes  
Fire: No  
Reactive: Yes  
Pressure: Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
SILICON TETRAFLUORIDE (related to Fluorides)	7783-61-1	No	No	Yes	Yes	No	Yes

Not regulated under California Proposition 65