

Section 1: Product and Company Identification

Middlesex Gases & Technologies

292 Second Street
P.O. Box 490249
Everett, MA 02149
(617) 387-5050
(800) 649-6704
Fax (617) 387-3537
<http://www.middlesexgases.com/>

Product Code: Silicon Tetrafluoride

Section 2: Hazards Identification



Danger

Hazard Classification:

Acute Gas Inhale Toxicity (Category 2)
Corrosive To Metal (Category 1)
Gases Under Pressure
Skin Corrosion (Category 1.A)

Hazard Statements:

Causes severe skin burns and eye damage
Contains gas under pressure; may explode if heated
Fatal if inhaled
May be corrosive to metals

Precautionary Statements

Prevention:

Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
[In case of inadequate ventilation] wear respiratory protection.
Do not breathe dust/fume/gas/mist/ vapors/spray..
Keep only in original container.
Wear protective gloves, protective clothing, eye protection and face protection.

Response:

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Immediately call a poison center or doctor.
Absorb spillage to prevent material damage.
Specific treatment is urgent.
If swallowed: Rinse mouth. Do NOT induce vomiting.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Protect from sunlight.
 Store locked up.
 Store in corrosive resistant container with a resistant inner liner.

Disposal:

Dispose of contents and/or container in accordance with applicable regulations.

Section 3: Composition/Information on Ingredients

CAS #
7783-61-1

Chemical Substance	Chemical Family	Trade Names
SILICON TETRAFLUORIDE	silicone/siloxane	SILANE, TETRAFLUORO-; TETRAFLUOROSILANE; SILICON FLUORIDE; PERFLUOROSILANE; SILICON TETRAFLUORIDE (SiF4); SILICON FLUORIDE (SiF4); UN 1859; F4Si

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
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.	Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If swallowed, drink plenty of water, DO NOT induce vomiting. Get immediate medical attention.	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.	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.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.	Water or Moisture: acids, hydrogen fluoride	<ul style="list-style-type: none"> ▪ Any self-contained breathing apparatus with a full facepiece. ▪ Any self-contained breathing apparatus with a full facepiece.

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Do not touch spilled material.	Prevent environmental contamination. Discard according to applicable regulations.	Stop leak if possible without personal risk. Reduce vapors with water spray.

Methods for Cleanup	Other Information

Methods for Cleanup	Other Information
Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal.	None

Section 7: Handling and Storage

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

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
SILICON TETRAFLUORIDE: 2.5 mg(F)/m ³ OSHA TWA 2.5 mg(F)/m ³ ACGIH TWA 2.5 mg(F)/m ³ NIOSH recommended TWA 10 hour(s).

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	Wear appropriate chemical resistant clothing.	Any self-contained breathing apparatus with a full facepiece.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Clear	Colorless	N/A	Gas	Irritating odor, pungent odor	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-123 F (-86 C)	-130 F (-90 C)	Not available	3.63 (Air=1)	1.7 @ -95 C	Decomposes	Acidic in solution	Not available	Not applicable	

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
104.09	F4-Si	0.266	Not available	Not available	Not applicable	Soluble: Absolute alcohol, hydrofluoric acid

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Reacts violently with water, releasing toxic gases. Releases corrosive gases.	Reacts violently with water, releasing toxic gases. Releases corrosive gases.	Acids, alcohols, bases, metal salts, metals, oxidizing materials

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Acids, hydrogen fluoride	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
LC50 Inhalation Gas. Rat 4544 ppm 1 hours	Not available	Burns

Eye Irritation	Skin Irritation	Sensitization
Burns	Burns	Respiratory tract burns, skin burns, eye burns, mucous membrane burns

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
ACGIH: A4 -Not Classifiable as a Human Carcinogen (Fluorides)	Not available	Not available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Silicon tetrafluoride	UN1859	2.3	Not applicable	2.3; 8	Forbidden	Forbidden	Toxic-Inhalation Hazard Zone B

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Silicon tetrafluoride, compressed	UN1859	2.3; 8	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	Yes	No	Yes	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65

Not regulated.

Canadian Regulations

WHMIS Classification

AD1E

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

NFPA Rating

HEALTH=3 FIRE=0 REACTIVITY=2

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard