SAFETY DATA SHEET
FILE NO.: SC-5410HP DATE: 06/06/2025

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: Tetramethoxysilane, also known as Tetramethyl orthosilicate

Product Number: SC-5410HP

CAS No. 681-84-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Industrial use, Intermediate chemical

Uses advised against: Not for food, drug, pesticide or biocidal product use

1.3 Details of the supplier of the safety data sheet

Manufactured/Supplied by Silsource Inc.

ADDRESS: 10625 Bryant Sideroad, Port Perry, Ontario, L9L 2C6

CHEMICAL EMERGENCY ONLY (PHONE): CANUTEC (613) 996-6666 [24 Hr.]

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Flammable liquids	Category 3
Acute toxicity, Inhalation	Category 1
Skin Irritation	Category 2
Serious eye damage	Category 1
Specific target organ toxicity - Single Exposure	Category 3

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Flammable

Very Toxic by inhalation

Irritating to respiratory system and skin

Risk of serious damage to eyes

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word : Danger

Hazard statement(s)

H226	Flammable liquid and vapor
H315	Causes skin irritation
H318	Causes serious eye damage
H330	Fatal if inhaled
H335	May cause respiratory irritation

2.3 Other hazards – none

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Tetramethyl orthosilicate

Formula $C_4H_{12}O_4Si$

Molecular Weight 152.22 g/mol

Component	Concentration
Tetramethoxysilane CAS-No. 681-84-5 EC-No. 211-656-4	-

3.2 Mixtures

Not Relevant

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

For small (incipient) fires, use media such as “alcohol” foam, dry chemical or carbon dioxide.

For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, silicon oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking.Take measures to prevent the build up of Electrostatic charge.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Moisture sensitive.

7.3 Specific end uses

no data available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colourless liquid
Odour	no data available
Odour Threshold	no data available
pH	no data available
Melting point/freezing Point	no data available
Initial boiling point	121° C - lit.
Flash point	26° C - closed cup
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Upper/lower flammability or	Upper explosion limit: 23,8 %(V)

explosive limits	Lower explosion limit: 0,88 %(V)
Vapour pressure	18 hPa at 20° C
Vapour density	5,26 - (Air = 1.0)
Relative density	1.023 g/cm^3 at 25 °C
Water solubility	no data available
Partition coefficient: noctanol/ Water	no data available
Autoignition temperature	no data available
Decomposition temperature	no data available
Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available

9.2 Other safety information

no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Exposure to moisture may affect product quality.

Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - no data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LC50 Inhalation - Rat - 4 h – 0,4 mg/l

LD50 Dermal - Rabbit - > 17.544 mg/kg

Skin corrosion/irritation

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

Inhalation – May cause respiratory irritation

Specific target orgtoxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	Harmful if inhaled. Causes respiratory tract infection
Ingestion	Harmful if swallowed
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye burns

Signs and Symptoms of Exposure

Blindness, Effects due to ingestion may include: Nausea, Vomiting, Gastrointestinal disturbance, Dizziness, Difficulty In breathing, Weakness, Drowsiness, Unconsciousness

Additional Information

RTECS: VV9800000

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID:2606 IMDG: 2606 IATA: 2606

14.2 UN proper shipping name

ADR/RID: TOXIC LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (Tetramethoxysilane)

IMDG: TOXIC LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (Tetramethoxysilane)

IATA: Toxic liquid, flammable liquid, n.o.s. (Tetramethyoxysilane)

14.3 Transport hazard class(es)

ADR/RID: 6.1(3)	IMDG: 6.1(3)	IATA: 6.1(3)

14.4 Packaging group

ADR/RID: I	IMDG: I	IATA: I

14.5 Environmental hazards

ADR/RID: no	IMDG Marine pollutant: no	IATA: no

14.6 Special precautions for user

no data available

SECTION 15: REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

no data available

SECTION 16: OTHER INFORMATION

This data is offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is made. The recommended handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use.

This SDS was prepared sincerely on the basis of the information we could obtain, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

This SDS is compliant with the GHS requirements outlined at
http://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/sds.html

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