SAFETY DATA SHEET
FILE NO.: SC-5420 DATE: 21/12/2022

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: Tetraethyl orthosilicate hydrolyzed

Product Number: SC-5420

CAS No. 68412-37-3

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

Physical hazard

Inflammable liquid — unclassified

Health hazards — no hazard classification

2.2 Label elements

Pictogram: None

Signal word: None

Hazard statement(s)

H332	Harmful if inhaled
H335	May cause respiratory irritation

Precautionary statements

P210	Keep away form heat resource/spark/open flame/ hot surfaces. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection

Incident response

P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.Rinse skin with water or shower.
P301+P330+P331	IF SWALLOWED:Rinse mouth, Do NOT induce vomiting.
P304 + P340	IF INHALED: Remove victim to fresh air and Keep at rest in position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if they are worn and easily accessible. Continue rinsing.
P370 + P378	In case of fire:Use dry sand, dry chemicals or alcohol-resistant foam to extinguish the fire.

Safe storage

P403+P235	Store in a well-ventilated place. Keep cool.

Waste disposal

P501	Dispose of contents/containers according to local regulations.

2.3 Other hazards – none

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: TEOS-40

Chemical name	CAS No.	Purity
Tetraethyl orthosilicate hydrolyzed	68412-37-3	≥ 97%
Ethanol	64-17-5	≤ 3%

3.2 Mixtures Not Relevant

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Move the patient to a safe area. 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

Remove all contaminated clothing immediately. Wash off gently with soap and plenty of water.

If skin irritation or rash occurs: Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. If convenient and easy to operate, remove contact lenses and continue cleaning, and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. If feeling unwell, call a POISON CENTER or consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Flash point

Flash point is about 48℃ (Test method: closed cup)

5.2 Extinguishing media

Suitable extinguishing media

Use dry powder or foam on large fires, carbon dioxide, dry powder, sand on small fires. Water can be used to cool fire-affected containers.

5.3 Special hazards arising from the substance or mixture

Be careful. Toxic fumes may decompose during burning or at high temperatures.

5.4 Advice for firefighters

Always wear personal protective equipment when fighting a fire. Wear self contained breathing apparatus for fire fighting if necessary.

5.5 Further information

Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. 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. Prevent emissions into the surrounding environment.

6.3 Methods and materials for containment and cleaning up

Contain spillage. Absorb with inert adsorbent and treat as hazardous waste. Store in a suitable enclosed processing container.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Process in well-ventilated areas. Wear suitable protective equipment. 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. Use explosion-proof equipment. Wash hands and face thoroughly after treatment.

7.2 Conditions for safe storage, including any incompatibilities

Must have fire safety measures to prevent fires from occurring. 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

Ingredient name	CAS No.	MAC
Tetraethyl orthosilicate hydrolyzed	68412-37-3	ACGIH TLV(TWA): 10 ppm OSHA PEL(TWA): 100 ppm

8.2 Exposure controls

Appropriate engineering controls

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

8.2.1 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).

8.2.2 Exposure to the environment limited and controlled

Local ventilation Recommend

General Ventilation Recommend

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Colourless and transparent
pH	no data available
Boiling point	no data available
Melting point	no data available
Flash point	> 62°C – (Closed cup)
Molecular weight	no data available
Ignition temperature	no data available
Oxidizing properties	no data available
Upper explosive limit:	no data available
Lower explosion limit:	no data available
Vapour pressure	no data available
Vapour density	no data available
Specific gravity	1.05 g/cm^3 (20°C)
Solubility	reacts with water
Heat of Combustion	no data available
Viscosity (20°C)	~ 5 mPa·s (25°C)

9.2 Other safety information

no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 General information

Stored and handled in accordance with standard industrial practices no hazardous reactions are known.

10.2 Chemical stability

Moisture sensitive

10.3 Possibility of hazardous reactions

Conditions to avoid:

Exposure to moisture may affect product quality. Heat, flames and sparks. Extremes of temperature and direct sunlight.

Hazardous decomposition products:

Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide.

Hazardous polymerization:

In the presence of water,strong acid,and heat, polymerization may occur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Route of exposure: inhalation, skin contact and accidental ingestion.

11.2 Signs and symptoms of overexposure:

Inhalation is harmful. May be harmful if swallowed. It may cause skin irritation.

11.3 Acute toxicity

Chemical Ingredients	CAS No.	Half lethal dose LD50 (Oral)	Half lethal dose LD50 (Dermal)	LC50 (inhalation)

Tetraethyl orthosilicate hydrolyzed	68412-37-3	-----	-----	-----

Potential health effects

Inhalation: Inhalation may be harmful. May cause respiratory irritation.

Ingestion: Ingestion is harmful to human body.

Skin: If absorbed through the skin, can be harmful. May cause skin irritation

Eye: cause eye irritation

11.4 Chronic toxicity

Organic silicon compounds are generally of low toxicity.

11.5 Other health hazard information

No data.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecological Toxicity

Fish: No data.

Toxicity to water fleas and other aquatic invertebrates: No data.

Algae: No data.

12.2 Persistence and degradability

This product hydrolyzes in water or moist air, releasing ethanol and organic silicon compounds

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Additional environmental information

Environmental hazards cannot be ruled out even in cases of professional treatment or disposal

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Dispose of in accordance with local regulations. 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

None

14.2 UN proper shipping name

None

14.3 Transport hazard class(es)

None

14.4 Packaging group

None

14.5 Environmental hazards

None

14.6 Special precautions for user

no data available

SECTION 15: REGULATORY INFORMATION

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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