



Silver Fern Chemical, Inc.

Safety Data Sheet

Tetraethoxysilane (TEOS)

Safety Data Sheet
according to OSHA Hazard Communication
29 CFR Part 1910.1200

Date Printed: 7/16/2024

SECTION 1. Identification

Product Name: Tetraethoxysilane (TEOS)

Supplied by: Silver Fern Chemical, Inc.
121 W De La Guerra St STE B
Santa Barbara, CA 93101
Phone: 1-866-282-3384
Info@silverfernchemical.com

Emergency phone number: 24 Hour Emergency Contact
Infotrac 1-800-535-5053 (USA & Canada)
Outside USA & Canada 1-352-323-3500

SECTION 2. Hazard(s) Identification

*** EMERGENCY OVERVIEW ***: Flammable liquid and vapor. Harmful if inhaled. Causes serious eye irritation.

GHS Classification

Acute Tox. 4 Inhalation, Eye Irrit. 2A, Flam. Liq. 3, STOT SE 3 RTI

Symbol(s) of Product



Signal Word

Warning

GHS HAZARD STATEMENTS

Flammable liquid, category 3	H226	Flammable liquid and vapor.
Eye Irritation, category 2A	H319	Causes serious eye irritation.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.

GHS PRECAUTIONARY STATEMENTS

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician if you feel unwell.

P337+P313
P370+P378
P403+P233
P403+P235
P405
P501

If eye irritation persists: Get medical advice/attention.
In case of fire: Use appropriate method to extinguish.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3. Composition/Information on Ingredients

Chemical Name	CAS-No.	Wt. %	GHS Symbols	GHS Statements
Tetraethoxysilane	78-10-4	75-100	GHS02-GHS07	H226-319-332-335

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. First-Aid Measures



FIRST AID - EYE CONTACT: Immediately flush eyes with water. Flush eyes with water for a minimum of 15 minutes, occasionally lifting and lowering upper lids. Get medical attention promptly.

FIRST AID - SKIN CONTACT: Immediately wash with soap and water. Get medical attention promptly if irritation develops or persists. Remove contaminated shoes and clothes and clean before reuse.

FIRST AID - INHALATION: Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention.

FIRST AID - INGESTION: Small amounts which accidentally enter mouth should be rinsed out until taste of it is gone. If symptoms persist, call a physician.

SECTION 5. Fire-Fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable liquid and vapor. Vapors/dust may form explosive mixture with air. Vapors can travel to a source of ignition and flash back. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Also, do not reuse container without commercial cleaning or reconditioning. Closed container may explode under extreme heat. Reacts slowly with water and moisture in air to form ethyl alcohol and silica. Closed container may explode when contaminated with water.

SPECIAL FIREFIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Material will float and may ignite on surface of water. Do not use water jet (frothing possible). Water spray to cool containers or protect personnel. Use with caution. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

EXTINGUISHING MEDIA: Alcohol Foam, Carbon Dioxide, Dry Chemical, Water Fog

SECTION 6. Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.) Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

SECTION 7. Handling and Storage



HANDLING: Use only in a well ventilated area. Avoid breathing vapor, fumes or mist. Avoid contact with eyes, skin, and clothing. Take precautionary measures against static discharge. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Follow all MSDS/label precautions even after containers are emptied because they may retain

product residues.

STORAGE: Keep away from heat, sparks, and flame. Store containers in a cool, well ventilated place. Keep container closed when not in use. Protect from direct sunlight.

SECTION 8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

<u>Chemical Name</u>	<u>ACGIH TLV-TWA</u>	<u>ACGIH-TLV STEL</u>	<u>OSHA PEL-TWA</u>	<u>OSHA PEL-CEILING</u>
Tetraethoxysilane	10 ppm	N.D.	100 ppm	N.D.

Personal Protection



RESPIRATORY PROTECTION: NIOSH/MSHA approved respirators may be necessary if airborne concentrations are expected to exceed exposure limits.



SKIN PROTECTION: Wear impervious gloves to prevent contact with the skin.



EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.



OTHER PROTECTIVE EQUIPMENT: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.



HYGENIC PRACTICES: Do not eat, drink, or smoke in areas where this material is used. Avoid breathing vapors. Remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Wash hands before eating.

SECTION 9. Physical and Chemical Properties

Appearance:	Clear, water white liquid	Physical State:	Liquid
Odor:	Typical	Odor Threshold:	N.D.
Density, g/cm3:	0.120	pH:	N.D.
Freeze Point, °F:	N.D.	Viscosity:	N.D.
Solubility in Water:	Insoluble	Explosive Limits, vol%:	N.D.
Boiling Range, °F:	N.D.	Flash Point, °F:	118.4
Evaporation Rate:	S	Auto-ignition Temp., °F:	N.D.
Vapor Density:	N.D.	Vapor Pressure:	N.D.

(See "Other information" Section for abbreviation legend)

SECTION 10. Stability and Reactivity

STABILITY: No Information

CONDITIONS TO AVOID: Avoid excess heat and sources of ignition.

INCOMPATIBILITY: Prevent contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic gases/fumes are given off during burning or thermal decomposition.

HAZARDOUS POLYMERIZATION: No Information

SECTION 11. Toxicological Information**Information on Toxicological Effects**

Primary Route(s) of Entry: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. Vapors can cause irritation to the respiratory tract. Symptoms may include coughing, difficulty breathing and shortness of breathe. May cause sore throat, Vapors have a narcotic effect and may cause headache, fatigue/drowsiness, dizziness and nausea. Be aware that symptoms of lung edema (shortness of breathe) may develop up to 24 hours after exposure.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May cause skin irritation. Material may be absorbed through skin.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes serious eye irritation. Symptoms include itching, burning, redness and tearing of eyes.

EFFECTS OF OVEREXPOSURE - INGESTION: Do not ingest. May cause nausea and vomiting. May cause dizziness.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: No Information

Carcinogenicity

<u>CAS-No.</u>	<u>Name</u>	<u>IARC</u>	<u>NTP</u>
78-10-4	Tetraethoxysilane	N.D.	N.D.
64-17-5	Ethyl alcohol	3- Not classifiable as to its carcinogenicity to humans.	Not Listed

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Name</u>	<u>Oral LD50, mg/kg</u>	<u>Dermal LD50, mg/kg</u>	<u>Vapor LC50, mg/L</u>
78-10-4	Tetraethoxysilane	5878	>2000	10

SECTION 12. Ecological Information

ECOLOGICAL INFORMATION: No Information

SECTION 13. Disposal Considerations

Always dispose of any waste in accordance with all local, state, and federal regulations.

DISPOSAL METHOD: Dispose of waste in accordance with all local, state and federal regulations.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.) Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

SECTION 14. Transport Information

DOT Proper Shipping Name:	Tetraethyl silicate	Packing Group:	III
DOT Hazard Class:	3	Hazard SubClass:	No Information
DOT UN/NA Number:	UN1292	Resp. Guide Page:	No Information

SECTION 15. Regulatory Information**U.S. Federal Regulations:****CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

U.S. State Regulations:**NEW JERSEY RIGHT-TO-KNOW:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

PENNSYLVANIA RIGHT-TO-KNOW

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS

Warning: The following ingredients present in the product are known to the state of California to cause Cancer.

No Proposition 65 Carcinogens exist in this product.

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product.

International Regulations: As follows -**CANADIAN WHMIS:**

This SDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class: No Information

SECTION 16. Other Information

Revision Date: 7/16/2024 Supersedes Date: New SDS

Datasheet produced by: EH&S - Regulatory Department

HMIS Ratings:

Health:	2	Flammability:	2	Reactivity:	1	Personal Protection:	X
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Volatile Organic Compounds, gr/ltr: 1

DISCLAIMER: THE VOLATILE ORGANIC COMPOUND (VOC) CONTENT REPORTED HEREIN, IF ANY, IS BASED ON A MATERIAL VOC CALCULATION. NOTE THAT SEVERAL METHODS ARE USED FOR CALCULATING VOC CONTENT AND THAT STANDARDS/ REQUIREMENTS REGARDING VOC CONTENT VARY BY LOCATION/JURISDICTION. ACCORDINGLY, EMCO MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, REGARDING THIS MATERIAL'S COMPLIANCE WITH VOC STANDARDS/ REQUIREMENTS APPLICABLE IN LOCATIONS/JURISDICTIONS WHERE THIS MATERIAL MAY BE SOLD OR USED.

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H226 Flammable liquid and vapor.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

GHS02



GHS07



Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined, N.I. - No Information

DISCLAIMER OF RESPONSIBILITY

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