



<a href="#">Silicon Ethoxide</a>	<a href="#">Pricing &gt;</a>
<a href="#">Tetraethylorthosilicate</a>	<a href="#">Pricing &gt;</a>

Signal Word	Warning
Hazard Statements	H226-H319-H332-H335
Hazard Codes	F, Xi
Precautionary Statements	P210-P233-P240-P241-P242-P243-P261-P264-P271-P280-P303+P361+P353-P304+P340+P312-P305+P351+P338-P337+P313-P378-P403+P233+P235-P501
Risk Codes	10-20-36/37
Safety Statements	N/A
RTCS Number	VV9450000
Transport Information	UN 1292 3PG 3
WGK Germany	3
GHS Pictograms	 <a href="#">GHS02 Flame</a>  <a href="#">GHS07 Exclamation Point</a>

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## SAFETY DATA SHEET

Date Accessed: 05/01/2024

Date Revised: 01/15/2022

### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #78-10-4

**Relevant identified uses of the substance:**  
Scientific research and development

Supplier details:  
American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

Emergency telephone number:  
Domestic, North America +1 800-424-9300  
International +1 703-527-3887

### SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture  
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)  
Flammable liquids (Category 3), H226  
Acute toxicity, Inhalation (Category 4), H332  
Eye irritation (Category 2A), H319  
Specific target organ toxicity - single exposure

(Category 3), Respiratory system, H335



Signal word: Warning

Hazard statement(s)

H226 Flammable liquid and vapor.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

Precautionary statement(s)

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P233 Keep container tightly closed.

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 skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ 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 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

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

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Tetraethoxysilane  
Orthosilicic acid tetraethyl ester  
Formula :  $\text{C}_8\text{H}_{20}\text{O}_4\text{Si}$   
Molecular weight : 208.33 g/mol  
CAS-No. : 78-10-4  
EC-No. : 201-083-8

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### **SECTION 4. FIRST AID MEASURES**

Description of first-aid measures  
General advice  
Show this material safety data sheet to the doctor in attendance.  
If inhaled  
After inhalation: fresh air.  
In case of skin contact  
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
In case of eye contact  
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.  
If swallowed  
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.  
Most important symptoms and effects, both acute and delayed  
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11  
Indication of any immediate medical attention and special treatment needed  
No data available

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### **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing media  
Carbon dioxide ( $\text{CO}_2$ ) Foam Dry powder  
Unsuitable extinguishing media  
For this substance/mixture no limitations of extinguishing agents are given.  
Special hazards arising from the substance or mixture  
Carbon oxides  
silicon oxides  
Combustible.  
Vapors are heavier than air and may spread along

floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Under fire conditions, material may decompose to form flammable and/or explosive

mixtures in air. Remove container from danger zone

and cool with water. Suppress (knock down)

gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions

(see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®).

Dispose of properly. Clean up affected area.

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## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and

sources of ignition. Take precautionary

measures against static discharge.

Hygiene measures

Change contaminated clothing. Preventive skin

protection recommended. Wash hands after working with substance.  
For precautions see section 2.2.  
Conditions for safe storage, including any incompatibilities  
Storage conditions  
Store under nitrogen.  
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.  
Moisture sensitive.  
Storage class (TRGS 510): 3: Flammable liquids  
Specific end use(s)  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Exposure controls  
Appropriate engineering controls  
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.  
Personal protective equipment  
Eye/face protection  
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses  
Skin protection  
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves.  
Body Protection  
Flame retardant antistatic protective clothing.  
Respiratory protection  
required when vapours/aerosols are generated.  
Control of environmental exposure  
Do not let product enter drains. Risk of explosion.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance Form: liquid  
Color: colorless  
Odor No data available

Odor Threshold No data available  
pH No data available  
Melting point/freezing point  
Melting point: -82.5 °C (-116.5 °F) at ca.1,013 hPa  
Initial boiling point and boiling range 168 °C 334 °F -  
lit.  
Flash point 45 °C (113 °F) - closed cup - DIN 51755  
Part 1  
Evaporation rate No data available  
Flammability (solid, gas) No data available  
Upper/lower flammability or explosive limits  
Upper explosion limit: 23 %(V)  
Lower explosion limit: 1.3 %(V)  
Vapor pressure < 1 hPa at 20 °C (68 °F)  
Vapor density 7.19 - (Air = 1.0)  
Relative density 0.933 g/cm<sup>3</sup> at 20 °C (68 °F)  
Water solubility 1.49 g/l at 23 °C (73 °F) at 7 hPa -  
soluble  
Partition coefficient: n-octanol/water  
log Pow: 3.18 at 40 °C (104 °F) - Bioaccumulation is  
not expected.  
Autoignition temperature 222 °C (432 °F) at 960.8  
hPa  
Decomposition temperature No data available  
Viscosity No data available  
Explosive properties No data available  
Oxidizing properties No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

### Reactivity

Vapor/air-mixtures are explosive at intense warming.

### Chemical stability

The product is chemically stable under standard  
ambient conditions (room temperature) .

May decompose on exposure to moist air or water.

### Possibility of hazardous reactions

No data available

### Conditions to avoid

Heating.

### Incompatible materials

Strong oxidizing agents, Strong acids

### Hazardous decomposition products

In the event of fire: see section 5

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

### Acute toxicity

LD50 Oral - Rat - male and female - > 2,500 mg/kg  
(OECD Test Guideline 423)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LD50 Oral - Rat - 6,270 mg/kg

Remarks:

(RTECS)

LC50 Inhalation - Rat - male - 4 h - 10 mg/l

(OECD Test Guideline 403)

Remarks:

(Regulation (EC) No 1272/2008, Annex VI)

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract

LD50 Dermal - Rabbit - 5,878 mg/kg

Remarks:

(RTECS)

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Causes serious eye irritation. (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Ames test

Salmonella typhimurium

Result: negative

Carcinogenicity

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

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Remarks:

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus

and gastrointestinal tract.  
Acute inhalation toxicity - mucosal irritations, Cough,  
Shortness of breath, Inhalation may  
lead to the formation of oedemas in the respiratory  
tract., Possible damages:, damage of  
respiratory tract  
Specific target organ toxicity - repeated exposure  
No data available  
Aspiration hazard  
No data available  
Repeated dose toxicity - Rat - male and female -  
Gavage - NOAEL (No observed adverse  
effect level) - 10 - 50 mg/kg  
RTECS: VV9450000  
To the best of our knowledge, the chemical, physical,  
and toxicological properties have not  
been thoroughly investigated.  
Systemic effects:  
After uptake of large quantities:  
Tiredness  
narcosis  
Damage to:  
Kidney  
Other dangerous properties can not be excluded.  
Handle in accordance with good industrial hygiene  
and safety practice.  
Liver - Irregularities - Based on Human Evidence  
Liver - Irregularities - Based on Human Evidence

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Toxicity to fish semi-static test LC50 - Danio rerio  
(zebra fish) - > 245 mg/l - 96 h  
(Regulation (EC) No. 440/2008, Annex, C.1)  
Toxicity to daphnia  
and other aquatic  
invertebrates  
flow-through test EC50 - Daphnia magna (Water flea)  
- > 75 mg/l -  
48 h  
(OECD Test Guideline 202)  
Toxicity to algae static test ErC50 -  
Pseudokirchneriella subcapitata - > 100 mg/l - 72h  
(OECD Test Guideline 201)  
Toxicity to bacteria static test EC50 - activated sludge  
- > 100 mg/l - 3 h  
(OECD Test Guideline 209)  
Persistence and degradability  
Biodegradability aerobic - Exposure time 28 d  
Result: 98 % - Readily biodegradable.  
(Directive 67/548/EEC Annex V, C.4.A.)  
Bioaccumulative potential



No data available  
Mobility in soil  
No data available  
Results of PBT and vPvB assessment  
PBT/vPvB assessment not available as chemical  
safety assessment not required/not  
conducted  
Other adverse effects  
No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Product  
Waste material must be disposed of in accordance  
with the national and local No mixing  
with other waste. Handle uncleaned containers like  
the product See  
[www.retrologistik.com](http://www.retrologistik.com) for processes regarding the  
return of chemicals and containers, or  
contact us there if you have further questions.

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## **SECTION 14. TRANSPORT INFORMATION**

DOT (US)  
UN number: 1292 Class: 3 Packing group: III  
Proper shipping name: Tetraethyl silicate  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No  
IMDG  
UN number: 1292 Class: 3 Packing group: III EMS-  
No: F-E, S-D  
Proper shipping name: TETRAETHYL SILICATE  
Marine pollutant : yes  
IATA  
UN number: 1292 Class: 3 Packing group: III  
Proper shipping name: Tetraethyl silicate

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## **SECTION 15. REGULATORY INFORMATION**

SARA 302 Components  
This material does not contain any components with a  
section 302 EHS TPQ.  
SARA 313 Components  
This material does not contain any chemical  
components with known CAS numbers that  
exceed the threshold (De Minimis) reporting levels  
established by SARA Title III, Section 313.

SARA 311/312 Hazards  
Fire Hazard, Acute Health Hazard, Chronic Health  
Hazard  
Massachusetts Right To Know Components  
No components are subject to the Massachusetts  
Right to Know Act

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## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

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