

Creation Date 27-May-2010

Revision Date 02-Feb-2024

Revision Number 4

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

Product Description:	<b>Tetraethoxysilane</b>
Cat No. :	<b>L04916</b>
Synonyms	Ethyl silicate; TEOS; Tetraethoxysilane
Index No	014-005-00-0
CAS No	78-10-4
EC No	201-083-8
Molecular Formula	C <sub>8</sub> H <sub>20</sub> O <sub>4</sub> Si
REACH registration number	-

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

Recommended Use	Laboratory chemicals.
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

### 1.3. Details of the supplier of the safety data sheet

#### Company

Thermo Fisher (Kandel) GmbH  
Erlenbachweg 2, 76870 Kandel, Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300

**Swiss distributor** - Fisher Scientific AG  
Neuhofstrasse 11, CH 4153 Reinach  
Tel: +41 (0) 56 618 41 11  
<https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html>

#### E-mail address

[begel.sdsdesk@thermofisher.com](mailto:begel.sdsdesk@thermofisher.com)

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

customers in Switzerland:

Tox Info Suisse Emergency Number: **145 (24hr)**  
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)  
Chemtrec (24h) Toll-Free: 0800 564 402  
Chemtrec Local: +41-43 508 20 11 (Zurich)

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## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### CLP Classification - Regulation (EC) No 1272/2008

##### Physical hazards

Flammable liquids

Category 3 (H226)

##### Health hazards

Acute Inhalation Toxicity - Vapors

Category 4 (H332)

Serious Eye Damage/Eye Irritation

Category 2 (H319)

Specific target organ toxicity - (single exposure)

Category 3 (H335)

##### Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

### 2.2. Label elements



Signal Word

Warning

#### **Hazard Statements**

H226 - Flammable liquid and vapor

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

#### **Precautionary Statements**

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

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

### 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Reacts with water and forms Ethanol (CAS: 64-17-5)

This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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## 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	78-10-4	EEC No. 201-083-8	>95	Flam. Liq. 3 (H226) Eye Irrit. 2 (H319) Acute Tox. 4 (H332) STOT SE 3 (H335)

REACH registration number	-
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Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	Do NOT induce vomiting. Get medical attention.
<b>Inhalation</b>	Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### 4.2. Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

### 4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

#### Extinguishing media which must not be used for safety reasons

Do not use water jetstream.

### 5.2. Special hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

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## Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Silicon dioxide, Ethanol.

### 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

### 6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

### 6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame.

**Technical Rules for Hazardous Substances (TRGS) 510**  
**Storage Class (LGK) (Germany)**

Class 3

**Switzerland - Storage of hazardous substances**

Storage class - SC 3  
<https://www.kvu.ch/de/themen/stoffe-und-produkte>  
<https://www.kvu.ch/fr/themes/substances-et-produits>  
<https://www.kvu.ch/it/temi/sostanze-e-prodotti>

### 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

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## Exposure limits

List source(s): **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund). **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC

Component	European Union	The United Kingdom	France	Belgium	Spain
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	TWA: 44 mg/m <sup>3</sup> (8h) TWA: 5 ppm (8h)	STEL: 15 ppm 15 min STEL: 132 mg/m <sup>3</sup> 15 min TWA: 5 ppm 8 hr TWA: 44 mg/m <sup>3</sup> 8 hr	TWA / VME: 5 ppm (8 heures). TWA / VME: 44 mg/m <sup>3</sup> (8 heures).	TWA: 5 ppm 8 uren TWA: 44 mg/m <sup>3</sup> 8 uren	TWA / VLA-ED: 5 ppm (8 horas) TWA / VLA-ED: 44 mg/m <sup>3</sup> (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	TWA: 44 mg/m <sup>3</sup> 8 ore. Time Weighted Average TWA: 5 ppm 8 ore. Time Weighted Average	TWA: 1.4 ppm (8 Stunden). AGW - exposure factor 1 TWA: 12 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 1 TWA: 10 ppm (8 Stunden). MAK TWA: 86 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 10 ppm Höhepunkt: 86 mg/m <sup>3</sup>	TWA: 5 ppm 8 horas TWA: 44 mg/m <sup>3</sup> 8 horas	TWA: 44 mg/m <sup>3</sup> 8 uren	TWA: 5 ppm 8 tunteina TWA: 43 mg/m <sup>3</sup> 8 tunteina STEL: 10 ppm 15 minuutteina STEL: 86 mg/m <sup>3</sup> 15 minuutteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	MAK-KZGW: 10 ppm 15 Minuten MAK-KZGW: 88 mg/m <sup>3</sup> 15 Minuten MAK-TMW: 5 ppm 8 Stunden MAK-TMW: 44 mg/m <sup>3</sup> 8 Stunden	TWA: 5 ppm 8 timer TWA: 44 mg/m <sup>3</sup> 8 timer STEL: 10 ppm 15 minutter STEL: 88 mg/m <sup>3</sup> 15 minutter	TWA: 5 ppm 8 Stunden TWA: 44 mg/m <sup>3</sup> 8 Stunden	TWA: 44 mg/m <sup>3</sup> 8 godzinach	TWA: 5 ppm 8 timer TWA: 44 mg/m <sup>3</sup> 8 timer STEL: 10 ppm 15 minutter. value calculated STEL: 66 mg/m <sup>3</sup> 15 minutter. value calculated

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	TWA: 44 mg/m <sup>3</sup> TWA: 5 ppm	TWA-GVI: 5 ppm 8 satima. TWA-GVI: 44 mg/m <sup>3</sup> 8 satima.	TWA: 5 ppm 8 hr. TWA: 44 mg/m <sup>3</sup> 8 hr. STEL: 15 ppm 15 min STEL: 132 mg/m <sup>3</sup> 15 min	TWA: 44 mg/m <sup>3</sup> TWA: 5 ppm	TWA: 50 mg/m <sup>3</sup> 8 hodinách. Ceiling: 200 mg/m <sup>3</sup>

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	TWA: 5 ppm 8 tundides. TWA: 44 mg/m <sup>3</sup> 8 tundides.	TWA: 44 mg/m <sup>3</sup> 8 hr TWA: 5 ppm 8 hr	TWA: 5 ppm TWA: 44 mg/m <sup>3</sup>	TWA: 44 mg/m <sup>3</sup> 8 óraban. AK	TWA: 5 ppm 8 klukkustundum. TWA: 44 mg/m <sup>3</sup> 8 klukkustundum. Ceiling: 20 ppm Ceiling: 170 mg/m <sup>3</sup>

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	TWA: 44 mg/m <sup>3</sup> TWA: 5 ppm	TWA: 44 mg/m <sup>3</sup> IPRD TWA: 5 ppm IPRD	TWA: 44 mg/m <sup>3</sup> 8 Stunden TWA: 5 ppm 8 Stunden	TWA: 5 ppm TWA: 44 mg/m <sup>3</sup>	TWA: 44 mg/m <sup>3</sup> 8 ore TWA: 5 ppm 8 ore

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	MAC: 20 mg/m <sup>3</sup>	TWA: 5 ppm TWA: 44 mg/m <sup>3</sup>	TWA: 5 ppm 8 urah TWA: 44 mg/m <sup>3</sup> 8 urah STEL: 5 ppm 15 minutah STEL: 44 mg/m <sup>3</sup> 15 minutah	Binding STEL: 10 ppm 15 minuter Binding STEL: 86 mg/m <sup>3</sup> 15 minuter TLV: 5 ppm 8 timmar. NGV TLV: 44 mg/m <sup>3</sup> 8 timmar. NGV	

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## Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

## Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

## Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester 78-10-4 ( >95 )		DNEL = 56mg/kg bw/day		DNEL = 56mg/kg bw/day

## Predicted No Effect Concentration (PNEC)

ETHANOL. See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester 78-10-4 ( >95 )	PNEC = 0.19mg/L	PNEC = 0.83mg/kg sediment dw	PNEC = 10mg/L	PNEC = 4000mg/L	PNEC = 0.05mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester 78-10-4 ( >95 )	PNEC = 0.019mg/L	PNEC = 0.083mg/kg sediment dw			

## 8.2. Exposure controls

### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles (European standard - EN 166)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	See manufacturers recommendations	-	EN 374	(minimum requirement)

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

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Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

## Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

## Large scale/emergency use

In case of insufficient ventilation, wear suitable respiratory equipment

## Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. When RPE is used a face piece Fit Test should be conducted

## Environmental exposure controls

No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Clear	
Odor	Slight aromatic	
Odor Threshold	85 mg/m <sup>3</sup>	
Melting Point/Range	-77 °C / -106.6 °F	
Softening Point	No data available	
Boiling Point/Range	166 - 169 °C / 330.8 - 336.2 °F	@ 760 mmHg
Flammability (liquid)	Flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available Lower 1.3 Vol% Upper 23 Vol%	
Flash Point	45 °C / 113 °F	Method - No information available
Autoignition Temperature	225 - °C / 437 - °F	
Decomposition Temperature	No data available	
pH	Not applicable	
Viscosity	0.75 mPa.s @ 20°C	
Water Solubility	Hydrolyzes	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Vapor Pressure	1.7 mbar @ 20°C	
Density / Specific Gravity	0.940	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

### 9.2. Other information

Molecular Formula	C8 H20 O4 Si
Molecular Weight	208.33
Explosive Properties	explosive air/vapour mixtures possible

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available

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## 10.2. Chemical stability

Stable under normal conditions. Moisture sensitive.

## 10.3. Possibility of hazardous reactions

### Hazardous Polymerization Hazardous Reactions

Hazardous polymerization does not occur.  
Reacts with water and forms Ethanol.

## 10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.

## 10.5. Incompatible materials

Strong oxidizing agents. Strong acids.

## 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Silicon dioxide. Ethanol.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Product Information

##### (a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	LD50 = 6270 mg/kg ( Rat )	LD50 = 5878 mg/kg ( Rabbit )	LC50=10 mg/l 4h(Rat; male) LC50=16.8 mg/l 4h(Rat; female)

##### (b) skin corrosion/irritation;

Based on available data, the classification criteria are not met

##### (c) serious eye damage/irritation;

Category 2

##### (d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

##### (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

##### (f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

##### (g) reproductive toxicity;

Based on available data, the classification criteria are not met

##### (h) STOT-single exposure;

Category 3

Results / Target organs

Respiratory system.

##### (i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.



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(j) aspiration hazard; Based on available data, the classification criteria are not met

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

## 11.2. Information on other hazards

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects** Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	LC50 >245 mg/L/96h (Brachydanio rerio)	EC50: >844 mg/L/48h	

**12.2. Persistence and degradability** Readily biodegradable

**12.3. Bioaccumulative potential** No information available

**12.4. Mobility in soil** No information available

**12.5. Results of PBT and vPvB assessment** Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

### 12.6. Endocrine disrupting properties

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

### 12.7. Other adverse effects

**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste from Residues/Unused Products** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

**European Waste Catalogue (EWC)** According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

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## Switzerland - Waste Ordinance

Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600  
<https://www.fedlex.admin.ch/eli/cc/2015/891/en>

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

**14.1. UN number** UN1292  
**14.2. UN proper shipping name** TETRAETHYL SILICATE  
**14.3. Transport hazard class(es)** 3  
**14.4. Packing group** III

### ADR

**14.1. UN number** UN1292  
**14.2. UN proper shipping name** TETRAETHYL SILICATE  
**14.3. Transport hazard class(es)** 3  
**14.4. Packing group** III

### IATA

**14.1. UN number** UN1292  
**14.2. UN proper shipping name** TETRAETHYL SILICATE  
**14.3. Transport hazard class(es)** 3  
**14.4. Packing group** III

**14.5. Environmental hazards** No hazards identified  
**14.6. Special precautions for user** No special precautions required.  
**14.7. Maritime transport in bulk according to IMO instruments** Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

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

#### International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	78-10-4	201-083-8	-	-	X	X	KE-33411	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	78-10-4	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances	REACH (1907/2006) - Annex XVII - Restrictions	REACH Regulation (EC 1907/2006) article 59 -
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		Subject to Authorization	on Certain Dangerous Substances	Candidate List of Substances of Very High Concern (SVHC)
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	78-10-4	-	Use restricted. See item 75. (see link for restriction details)	-

## REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

## Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	78-10-4	Not applicable	Not applicable

## Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

## Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

## National Regulations

**UK** - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

## WGK Classification

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester	WGK1	

## Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H226 - Flammable liquid and vapor

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

### Legend

# SAFETY DATA SHEET

Tetraethoxysilane

Revision Date 02-Feb-2024

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer  
Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (volatile organic compound)

## Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

## Prepared By

Health, Safety and Environmental Department

## Creation Date

27-May-2010

## Revision Date

02-Feb-2024

## Revision Summary

New emergency telephone response service provider.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.  
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No  
1907/2006 .**

**For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2,  
Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and  
Preparations).**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**