SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Physical state: Liquid
Substance name: TETRAETHOXYSILANE, oligomeric hydrolysate
Product code: SIT7110.3
Formula: \([\{(\text{C}_2\text{H}_5\text{O})_2\text{SiO}\}\]
Synonyms: POLY(DIETHOXYSILANE); ETHYLSILICATE
Chemical family: ORGANOETHOXYSILANE

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

1.2.1. Relevant identified uses

Use of the substance/mixture: Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3 H226
Serious eye damage/eye irritation, Category 2 H319
Specific target organ toxicity — Single exposure, Category 3 H335
Respiratory tract irritation

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP):

- GHS02
- GHS07

Signal word (CLP): Warning

Hazard statements (CLP): H226 - Flammable liquid and vapour.
H319 - Causes serious eye irritation.
TETRAETHOXYSILANE, oligomeric hydrolysate
Safety Data Sheet

Precautionary statements (CLP):
- H335 - May cause respiratory irritation.
- 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.
- P240 - Ground/bond container and receiving equipment.
- P261 - Avoid breathing vapours.
- P264 - Wash hands thoroughly after handling.
- P312 - Call a doctor if you feel unwell.

2.3. Other hazards:
Other hazards not contributing to the classification:
- Additional ethanol may be formed by reaction with moisture and water. The hydrolysis product of this compound is ethanol. Overexposure to ethanol by skin absorption, inhalation or ingestion may have a narcotic effect (headache, nausea, drowsiness). Ethanol is metabolized to acetaldehyde and acetic acid which in large quantities result in metabolic acidosis, CNS depression and death due to respiratory arrest. The US OSHA PEL (TWA) for ethanol is 1000 ppm. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages.

SECTION 3: Composition/information on ingredients
3.1. Substances:
- Substance type: Mono-constituent
- Name: TETRAETHOXYSILANE, oligomeric hydrolysate
- CAS-No.: 68412-37-3/11099-06-2

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetraethoxysilane, oligomeric hydrolysate, listed under more than one CAS number</td>
<td>(CAS-No.) 68412-37-3/11099-06-2</td>
<td>95 - 100</td>
<td>Flam. Liq. 3, H226 Eye Irrit. 2, H319 STOT SE 3, H335</td>
</tr>
<tr>
<td>Ethyl silicate</td>
<td>(CAS-No.) 78-10-4 (EC-No.) 201-083-8 (EC Index-No.) 014-005-00-0</td>
<td>1 - 5</td>
<td>Flam. Liq. 3, H226 Acute Tox.4 (Inhalation), H332 Eye Irrit. 2, H319 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures:
Not applicable

SECTION 4: First aid measures
4.1. Description of first aid measures:
- First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact: Wash with plenty of water/…. Get medical advice/attention.
- First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed:
- Symptoms/effects after inhalation: May cause irritation to the respiratory tract. May be harmful if inhaled.
- Symptoms/effects after skin contact: May cause skin irritation.
- Symptoms/effects after eye contact: Causes serious eye irritation.
- Symptoms/effects after ingestion: May be harmful if swallowed.
- Chronic symptoms: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

4.3. Indication of any immediate medical attention and special treatment needed:
No additional information available

SECTION 5: Firefighting measures
5.1. Extinguishing media:
- Unsuitable extinguishing media: Do not use straight streams.
5.2. Special hazards arising from the substance or mixture
Fire hazard: Flammable liquid and vapour. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
General measures: Remove ignition sources. Use special care to avoid static electric charges.
6.1.1. For non-emergency personnel
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.
6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use only non-sparking tools.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up.
Incompatible materials: Oxidizing agent. Moisture. Water:
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
Ethyl silicate (78-10-4)
Austria: MAK (mg/m³) 170 mg/m³
Austria: MAK (ppm) 20 ppm
Austria: MAK Short time value (mg/m³) 340 mg/m³
Austria: MAK Short time value (ppm) 40 ppm
Belgium: Limit value (mg/m³) 86 mg/m³
Belgium: Limit value (ppm) 10 ppm
Bulgaria: OEL TWA (mg/m³) 100 mg/m³
France: VME (mg/m³) 85 mg/m³
France: VME (ppm) 10 ppm
Germany: TRGS 900 Occupational exposure limit value (mg/m³) 12 mg/m³
### Exposed silicate (78-10-4)

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard Type</th>
<th>Limit (mg/m³)</th>
<th>Limit (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>TRGS 900 Occupational exposure limit value (ppm)</td>
<td>1.4 ppm</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>OEL TWA (mg/m³)</td>
<td>170 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>OEL TWA (ppm)</td>
<td>20 ppm</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>OEL STEL (mg/m³)</td>
<td>255 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>OEL STEL (ppm)</td>
<td>30 ppm</td>
<td></td>
</tr>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH TWA (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>USA IDLH</td>
<td>US IDLH (ppm)</td>
<td>700 ppm</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (mg/m³)</td>
<td>850 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>100 ppm</td>
<td></td>
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<tr>
<td>Spain</td>
<td>VLA-ED (mg/m³)</td>
<td>87 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>VLA-ED (ppm)</td>
<td>10 ppm</td>
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<tr>
<td>Switzerland</td>
<td>KZGW (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>KZGW (ppm)</td>
<td>10 ppm</td>
<td></td>
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<tr>
<td>Switzerland</td>
<td>MAK (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>MAK (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Expoziční limity (PEL) (mg/m³)</td>
<td>50 mg/m³</td>
<td></td>
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<tr>
<td>Denmark</td>
<td>Grænseværdie (langvarig) (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>Grænseværdie (langvarig) (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (mg/m³)</td>
<td>86 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (ppm)</td>
<td>10 ppm</td>
<td></td>
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<tr>
<td>Finland</td>
<td>HTP-arvo (15 min)</td>
<td>170 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (15 min) (ppm)</td>
<td>20 ppm</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (8 hours ref) (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (8 hours ref) (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (15 min ref) (mg/m³)</td>
<td>255 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (15 min ref) (ppm)</td>
<td>30 ppm</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (AN) (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (AN) (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (Korttidsverdi) (mg/m3)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdier (Korttidsverdi) (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>NDS (mg/m³)</td>
<td>80 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>OEL TWA (mg/m³)</td>
<td>100 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>OEL STEL (mg/m³)</td>
<td>200 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Canada (Quebec)</td>
<td>VEMP (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Canada (Quebec)</td>
<td>VEMP (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>TWA (mg/m³)</td>
<td>85 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>TWA (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>OEL TWA (ppm)</td>
<td>10 ppm</td>
<td></td>
</tr>
</tbody>
</table>

### 8.2. Exposure controls

#### Appropriate engineering controls:

Provide local exhaust or general room ventilation.

#### Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

#### Hand protection:

Neoprene or nitrile rubber gloves

#### Eye protection:

Chemical goggles. Contact lenses should not be worn
Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>650 - 800 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.398</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>&lt; -20 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt; 169 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>46 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>260 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>7.2</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.05 - 1.07</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&lt; 60 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water. Reacts with water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>3 - 5 cSt</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Material decomposes slowly in contact with moist air or with water liberating ethanol.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials
Oxidizing agent. Moisture. Water :

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat TETRAETHOXYSILANE, oligomeric hydrolysate (68412-37-3/11099-06-2)</td>
<td>9280 mg/kg</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
<td>9280 mg/kg bodyweight</td>
</tr>
<tr>
<td>LD50 oral rat Ethyl silicate (78-10-4)</td>
<td>6270 mg/kg</td>
</tr>
<tr>
<td>LDLo inhalation rat TETRAETHOXYSILANE, oligomeric hydrolysate, listed under more than one CAS number (68412-37-3/11099-06-2)</td>
<td>1000 ppm/4h</td>
</tr>
<tr>
<td>LD50 oral rat TETRAETHOXYSILANE, oligomeric hydrolysate, listed under more than one CAS number (68412-37-3/11099-06-2)</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rat TETRAETHOXYSILANE, oligomeric hydrolysate, listed under more than one CAS number (68412-37-3/11099-06-2)</td>
<td>&gt; 4450 mg/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/iritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/iritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Eye irritation: eye-hmn, 3000 ppm: severe Irritant</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>May cause irritation to the respiratory tract. May be harmful if inhaled.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
<tr>
<td>Chronic symptoms</td>
<td>On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.</td>
</tr>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

12.1. **Toxicity**
- Acute aquatic toxicity: Not classified
- Chronic aquatic toxicity: Not classified

**Tetraethoxysilane, oligomeric hydrolysate, listed under more than one CAS number (68412-37-3/11099-06-2)**
- EC50 Daphnia 1: > 193 mg/l (Exposure time: 48 h - Species: Daphnia magna)

12.2. **Persistence and degradability**
No additional information available

12.3. **Bioaccumulative potential**
No additional information available

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

12.5. **Results of PBT and vPvB assessment**
No additional information available

12.6. **Other adverse effects**
- Other adverse effects: This substance may be hazardous to the environment.

**SECTION 13: Disposal considerations**

13.1. **Waste treatment methods**
- Sewage disposal recommendations: Do not dispose of waste into sewer.
- Product/Packaging disposal recommendations: Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
- Additional information: Handle empty containers with care because residual vapours are flammable.
- Ecology - waste materials: Avoid release to the environment.

**SECTION 14: Transport information**

14.1. **UN number**
- In accordance with ADR / RID / IMDG / IATA / ADN
TETRAETHOXY SILANE, oligomeric hydrolysate
Safety Data Sheet

14.1. UN number
UN-No. (ADR) : 1292
UN-No. (IMDG) : 1292
UN-No. (IATA) : 1292
UN-No. (ADN) : 1292
UN-No. (RID) : 1292

14.2. UN proper shipping name
Proper Shipping Name (ADR) : TETRAETHYL SILICATE
Proper Shipping Name (IMDG) : TETRAETHYL SILICATE
Proper Shipping Name (IATA) : Tetraethyl silicate
Proper Shipping Name (ADN) : TETRAETHYL SILICATE
Proper Shipping Name (RID) : TETRAETHYL SILICATE
Transport document description (ADR) : UN 1292 TETRAETHYL SILICATE, 3, III, (D/E)
Transport document description (IMDG) : UN 1292 TETRAETHYL SILICATE, 3, III (37°C c.c.)
Transport document description (IATA) : UN 1292 Tetraethyl silicate, 3, III
Transport document description (ADN) : UN 1292 TETRAETHYL SILICATE, 3, III
Transport document description (RID) : UN 1292 TETRAETHYL SILICATE, 3, III

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3

IMDG
Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3

IATA
Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3

ADN
Transport hazard class(es) (ADN) : 3
Danger labels (ADN) : 3

RID
Transport hazard class(es) (RID) : 3
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14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport
  Classification code (ADR) : F1
  Limited quantities (ADR) : 5l
  Excepted quantities (ADR) : E1
  Packing instructions (ADR) : P001, IBC03, LP01, R001
  Mixed packing provisions (ADR) : MP19
  Portable tank and bulk container instructions (ADR) : T2
  Tank code (ADR) : LGBF
  Vehicle for tank carriage : FL
  Transport category (ADR) : 3
  Special provisions for carriage - Packages (ADR) : V12
  Special provisions for carriage - Operation (ADR) : S2
  Hazard identification number (Kemler No.) : 30
  Orange plates : 1292

  Tunnel restriction code (ADR) : D/E
  EAC code : 3Y

- Transport by sea
  Limited quantities (IMDG) : 5 L
  Excepted quantities (IMDG) : E1
  Packing instructions (IMDG) : P001, LP01
  IBC packing instructions (IMDG) : IBC03
  Tank instructions (IMDG) : T2
  Tank special provisions (IMDG) : TP1
  EmS-No. (Fire) : F-E
  EmS-No. (Spillage) : S-D
  Stowage category (IMDG) : A
  Flash point (IMDG) : 37°C c.c.
  Properties and observations (IMDG) : Colourless liquid. Flashpoint: 37°C c.c. Explosive limits: 1.3% to 23% Immiscible with water.

- Air transport
  PCA Excepted quantities (IATA) : E1
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<table>
<thead>
<tr>
<th>PCA Limited quantities (IATA)</th>
<th>: Y344</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCA limited quantity max net quantity (IATA)</td>
<td>: 10L</td>
</tr>
<tr>
<td>PCA packing instructions (IATA)</td>
<td>: 355</td>
</tr>
<tr>
<td>PCA max net quantity (IATA)</td>
<td>: 60L</td>
</tr>
<tr>
<td>CAO packing instructions (IATA)</td>
<td>: 366</td>
</tr>
<tr>
<td>CAO max net quantity (IATA)</td>
<td>: 220L</td>
</tr>
<tr>
<td>ERG code (IATA)</td>
<td>: 3L</td>
</tr>
</tbody>
</table>

**- Inland waterway transport**

| Classification code (ADN) | : F1 |
| Limited quantities (ADN) | : 5 L |
| Excepted quantities (ADN) | : E1 |
| Equipment required (ADN) | : PP, EX, A |
| Ventilation (ADN) | : VE01 |
| Number of blue cones/lights (ADN) | : 0 |

**- Rail transport**

| Classification code (RID) | : F1 |
| Limited quantities (RID) | : 5L |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : MP19 |
| Portable tank and bulk container instructions (RID) | : T2 |
| Portable tank and bulk container special provisions (RID) | : TP1 |
| Tank codes for RID tanks (RID) | : LGBF |
| Transport category (RID) | : 3 |
| Special provisions for carriage – Packages (RID) | : W12 |
| Colis express (express parcels) (RID) | : CE4 |
| Hazard identification number (RID) | : 30 |

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

### SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

TETRAETHOXYSILANE, oligomeric hydrolysate is not on the REACH Candidate List

TETRAETHOXYSILANE, oligomeric hydrolysate is not on the REACH Annex XIV List

TETRAETHOXYSILANE, oligomeric hydrolysate is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.


% Volatiles | : < 60 %

#### 15.1.2. National regulations

**Germany**

12th Ordinance Implementing the Federal Immission Control Act - 12 BlmSchV | Is not subject of the 12. BlmSchV (Hazardous Incident Ordinance)

**Netherlands**

SZW-list van kankerverwekkende stoffen | The substance is not listed

SZW-list van mutagene stoffen | The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding | The substance is not listed
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NIET-limietvaste lijst van voor de voortplanting
giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limietvaste lijst van voor de voortplanting
giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Class for fire hazard : Class II-1
Store unit : 5 liter
Classification remarks : R10 <H226;H319;H335>; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information

Abbreviations and acronyms:
- Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:
- Acute Tox. 4 (Inhalation) : Acute toxicity (inhal.), Category 4
- Eye Irrit. 2 : Serious eye damage/eye irritation, Category 2
- Flam. Liq. 3 : Flammable liquids, Category 3
- STOT SE 3 : Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
- H226 : Flammable liquid and vapour.
- H319 : Causes serious eye irritation.
- H332 : Harmful if inhaled.
- H335 : May cause respiratory irritation.

SDS EU (REACH Annex II) - Custom

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