



# SAFETY DATA SHEET

DOW CHEMICAL COMPANY LIMITED

Safety Data Sheet according to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law

**Product name:** SILASTIC™ RTV-3081-VF Mould-Making Curing Agent

**Revision Date:** 30.12.2022

**Version:** 6.0

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DOW CHEMICAL COMPANY LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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

### 1.1 Product identifier

**Product name:** SILASTIC™ RTV-3081-VF Mould-Making Curing Agent

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

**Identified uses:** Use at industrial sites: Use in rubber production and processing.

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

#### COMPANY IDENTIFICATION

DOW CHEMICAL COMPANY LIMITED  
5 OAKWATER AVENUE  
CHEADLE ROYAL BUSINESS PARK  
CHEADLE  
SK8 3SR  
UNITED KINGDOM

#### Customer Information Number:

+44 (0) 1663 746518

SDSQuestion@dow.com

#### Fax:

+44 (0) 1663 746605

### 1.4 EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 0031 115 694 982

**Local Emergency Contact:** 00 31 115 69 4982

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008, as retained and amended in UK law**

Flammable liquids - Category 3 - H226

Skin irritation - Category 2 - H315

Skin sensitisation - Category 1 - H317

Long-term (chronic) aquatic hazard - Category 2 - H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008, as retained and amended in UK law

### Hazard pictograms



Signal word: **WARNING**

### Hazard statements

- |      |  |
|------|--|
| H226 | Flammable liquid and vapour.                     |
| H315 | Causes skin irritation.                          |
| H317 | May cause an allergic skin reaction.             |
| H411 | Toxic to aquatic life with long lasting effects. |

### Precautionary statements

- |             |   |
|-------------|---|
| P210        | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.<br>No smoking.       |
| P261        | Avoid breathing mist or vapours.  |
| P273        | Avoid release to the environment.   |
| P280        | Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.       |
| P370 + P378 | In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish. |
| P391        | Collect spillage.   |

**Contains** Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

## 2.3 Other hazards

Static-accumulating flammable liquid.

This product contains no substances assessed to be PBT or vPvB at levels of 0.1% or higher.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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**Chemical nature:** Organotin compound

### 3.2 Mixtures

This product is a mixture.

CASRN / EC-No. / Index-No.	UK REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008, as retained and amended in UK law
<b>CASRN</b> 11099-06-2 <b>EC-No.</b> 234-324-0 <b>Index-No.</b> —	—	>= 18.0 - <= 26.0 %	Ethyl polysilicate	Aquatic Chronic 2; H411  Acute toxicity estimate Acute oral toxicity: > 7,500 mg/kg Acute inhalation toxicity: > 7.35 mg/l, 4 Hour, dust/mist Acute dermal toxicity: 4,290 mg/kg
<b>CASRN</b> 68928-76-7 <b>EC-No.</b> 273-028-6 <b>Index-No.</b> —	—	>= 12.0 - <= 17.0 %	Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1A; H317 Aquatic Chronic 3; H412  Acute toxicity estimate Acute oral toxicity: 892 mg/kg Acute dermal toxicity: > 2,000 mg/kg
<b>CASRN</b> 78-10-4 <b>EC-No.</b> 201-083-8 <b>Index-No.</b> 014-005-00-0	—	>= 2.2 - <= 4.2 %	tetraethyl silicate	Flam. Liq. 3; H226 Acute Tox. 4; H332 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)  Acute toxicity estimate Acute oral toxicity: > 2,500 mg/kg Acute inhalation toxicity: > 16.8 mg/l, 4 Hour, dust/mist 10 mg/l, 4 Hour, dust/mist 17 mg/l, 4 Hour, vapour Acute dermal toxicity: 5,878 mg/kg
<b>CASRN</b> 67-56-1 <b>EC-No.</b> 200-659-6	—	>= 0.15 - <= 0.26 %	methanol	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311

<b>Index-No.</b> 603-001-00-X				<p>STOT SE 1; H370 (Eyes, Central nervous system)</p> <p>specific concentration limit STOT SE 1; H370 ≥ 10 %</p> <p>specific concentration limit STOT SE 2; H371 3 - &lt; 10 %</p> <p>Acute toxicity estimate Acute oral toxicity: &gt; 5,000 mg/kg 340 mg/kg Acute inhalation toxicity: 3 mg/l, 4 Hour, vapour Acute dermal toxicity: 15,800 mg/kg</p>
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<b>CASRN</b> 1112-39-6 <b>EC-No.</b> 214-189-4 <b>Index-No.</b> —	—	≥ 0.08 - ≤ 0.14 %	Dimethyldimethoxy silane	<p>Flam. Liq. 2; H225 Repr. 2; H361</p> <p>Acute toxicity estimate Acute oral toxicity: &gt; 2,000 - 5,000 mg/kg Acute inhalation toxicity: &gt; 4.7 mg/l, 4 Hour, vapour</p>
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Substances with a workplace exposure limit

<b>CASRN</b> 1185-55-3 <b>EC-No.</b> 214-685-0 <b>Index-No.</b> —	—	≥ 8.0 - ≤ 11.0 %	Methyltrimethoxysilane	<p>Flam. Liq. 2; H225</p> <p>Acute toxicity estimate Acute oral toxicity: 11,685 mg/kg Acute inhalation toxicity: &gt; 7605 ppm, 6 Hour, vapour Acute dermal toxicity: &gt; 9,500 mg/kg</p>
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For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

#### **4.2 Most important symptoms and effects, both acute and delayed:**

Causes skin irritation. May cause an allergic skin reaction.

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

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

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## **SECTION 5: FIREFIGHTING MEASURES**

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### **5.1 Extinguishing media**

**Suitable extinguishing media:** Alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Dry sand.

**Unsuitable extinguishing media:** High volume water jet. Do not use direct water stream..

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

**Hazardous combustion products:** Carbon oxides. Silicon oxides. Nitrogen oxides (NO<sub>x</sub>). Oxides of phosphorus. Metal oxides.

**Unusual Fire and Explosion Hazards:** Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.. Flammable mixtures may exist within the vapor space of containers at room temperature.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. Vapours may form explosive mixtures with air..

### **5.3 Advice for firefighters**

**Fire Fighting Procedures:** Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire.. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**6.1 Personal precautions, protective equipment and emergency procedures:** Remove all sources of ignition. Use personal protective equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Follow safe handling advice and personal protective equipment recommendations.

**6.2 Environmental precautions:** Do not release the product to the aquatic environment above defined regulatory levels. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

**6.3 Methods and materials for containment and cleaning up:** Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

**6.4 Reference to other sections:**

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: HANDLING AND STORAGE

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**7.1 Precautions for safe handling:** Do not get on skin or clothing. Avoid inhalation of vapour or mist. Avoid contact with eyes. Do not swallow. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Non-sparking tools should be used. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.

Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause

an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity. Ground and bond container and receiving equipment.

**7.2 Conditions for safe storage, including any incompatibilities:** Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Do not store with the following product types: Strong oxidizing agents. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. Gases. Unsuitable materials for containers: None known.

**7.3 Specific end use(s):** See the technical data sheet on this product for further information.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane	ACGIH	TWA	0.1 mg/m <sup>3</sup> , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
	ACGIH	STEL	0.2 mg/m <sup>3</sup> , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
	GB EH40	TWA	0.1 mg/m <sup>3</sup> , Tin
	Further information: Sk: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
	GB EH40	STEL	0.2 mg/m <sup>3</sup> , Tin
	Further information: Sk: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
tetraethyl silicate	ACGIH	TWA	10 ppm
	GB EH40	TWA	44 mg/m <sup>3</sup> 5 ppm
methanol	ACGIH	TWA	200 ppm
	Further information: Skin: Danger of cutaneous absorption		
	ACGIH	STEL	250 ppm
	Further information: Skin: Danger of cutaneous absorption		
	GB EH40	TWA	266 mg/m <sup>3</sup> 200 ppm
	Further information: Sk: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
	GB EH40	STEL	333 mg/m <sup>3</sup> 250 ppm
	Further information: Sk: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
Ethanol	ACGIH	TWA	1,000 ppm

Further information: URT irr: Upper Respiratory Tract irritation			
	ACGIH	STEL	1,000 ppm
Further information: URT irr: Upper Respiratory Tract irritation			
	GB EH40	TWA	1,920 mg/m <sup>3</sup> 1,000 ppm

The following substance(s), which have Occupational Exposure Limit(s) (OEL), may be formed during handling or processing: Methanol, Ethanol

#### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

#### Recommended monitoring procedures

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with the Occupational Exposure Limits and the adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples should be analysed by an accredited laboratory.

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy); European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents); European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods. Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods. Health and Safety Executive (HSE), United Kingdom: Methods for the Determination of Hazardous Substances.

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany.

L'Institut National de Recherche et de Sécurité (INRS), France.

#### Derived No Effect Level

Ethyl polysilicate

##### Workers

Acute systemic effects		Acute local effects		Long-term systemic effects		Long-term local effects	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	0.7 mg/kg bw/day	0.985 mg/m <sup>3</sup>	n.a.	n.a.



### Consumers

Acute systemic effects			Acute local effects		Long-term systemic effects			Long-term local effects	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	0.25 mg/kg bw/day	0.175 mg/m3	0.25 mg/kg bw/day	n.a.	n.a.

tetraethyl silicate

### Workers

Acute systemic effects		Acute local effects		Long-term systemic effects		Long-term local effects	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
12.1 mg/kg bw/day	85 mg/m3	n.a.	85 mg/m3	12.1 mg/kg bw/day	85 mg/m3	n.a.	85 mg/m3

### Consumers

Acute systemic effects			Acute local effects		Long-term systemic effects			Long-term local effects	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
8.4 mg/kg bw/day	25 mg/m3	n.a.	n.a.	25 mg/m3	8.4 mg/kg bw/day	25 mg/m3	n.a.	n.a.	25 mg/m3

methanol

### Workers

Acute systemic effects		Acute local effects		Long-term systemic effects		Long-term local effects	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
20 mg/kg bw/day	130 mg/m3	n.a.	130 mg/m3	20 mg/kg bw/day	130 mg/m3	n.a.	130 mg/m3

### Consumers

Acute systemic effects			Acute local effects		Long-term systemic effects			Long-term local effects	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
4 mg/kg bw/day	26 mg/m3	4 mg/kg bw/day	n.a.	26 mg/m3	4 mg/kg bw/day	26 mg/m3	4 mg/kg bw/day	n.a.	26 mg/m3

Dimethyldimethoxysilane

### Workers

Acute systemic effects		Acute local effects		Long-term systemic effects		Long-term local effects	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
7.44 mg/kg bw/day	88.4 mg/m3	n.a.	n.a.	7.44 mg/kg bw/day	88.4 mg/m3	n.a.	n.a.

### Consumers

Acute systemic effects			Acute local effects		Long-term systemic effects			Long-term local effects	
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Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.21 mg/kg bw/day	n.a.	n.a.

Methyltrimethoxysilane

**Workers**

<i>Acute systemic effects</i>			<i>Acute local effects</i>		<i>Long-term systemic effects</i>		<i>Long-term local effects</i>	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	3.6 mg/m3	25.6 mg/m3	n.a.	n.a.

**Consumers**

<i>Acute systemic effects</i>			<i>Acute local effects</i>		<i>Long-term systemic effects</i>			<i>Long-term local effects</i>	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	7.2 mg/m3	6.25 mg/m3	0.26 mg/m3	n.a.	n.a.

**Predicted No Effect Concentration**

Ethyl polysilicate

Compartment	PNEC
Fresh water	0.0061 mg/l
Intermittent use/release	0.061 mg/l
Marine water	0.00061 mg/l
Sewage treatment plant	200 mg/l
Fresh water sediment	0.138 mg/kg dry weight (d.w.)
Marine sediment	0.0138 mg/kg dry weight (d.w.)
Soil	0.024 mg/kg dry weight (d.w.)

tetraethyl silicate

Compartment	PNEC
Fresh water	0.192 mg/l
Intermittent use/release	10 mg/l
Marine water	0.0192 mg/l
Sewage treatment plant	4000 mg/l
Fresh water sediment	0.18 mg/kg dry weight (d.w.)
Marine sediment	0.018 mg/kg dry weight (d.w.)
Soil	0.05 mg/kg dry weight (d.w.)

methanol

Compartment	PNEC
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Dimethyldimethoxysilane

Compartment	PNEC
Fresh water	0.24 mg/l
Marine water	0.024 mg/l
Fresh water sediment	0.22 mg/kg
Marine sediment	0.022 mg/kg
Soil	0.053 mg/kg
Sewage treatment plant	10 mg/l

Methyltrimethoxysilane

Compartment	PNEC
Fresh water sediment	0.73 mg/kg
Marine sediment	0.073 mg/kg
Soil	0.03 mg/kg

## 8.2 Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator (meeting standard EN 136) with organic vapor cartridge (meeting standard EN 14387).

### Skin protection

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	liquid
Color	Clear to slightly hazy, colourless
Odor	not significant
Odor Threshold	No data available
pH	Not applicable, substance/mixture is non-soluble (in water)
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	> 65 °C
Flash point	<b>Seta closed cup</b> 25 °C
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.004
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	30 mPa.s
Kinematic Viscosity	No data available
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

### 9.2 Other information

Molecular weight	No data available
Particle size	Not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## SECTION 10: STABILITY AND REACTIVITY

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**10.1 Reactivity:** Not classified as a reactivity hazard.

**10.2 Chemical stability:** Stable under normal conditions.

**10.3 Possibility of hazardous reactions:** Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Flammable liquid and vapour.

**10.4 Conditions to avoid:** Avoid static discharge. Heat, flames and sparks.

**10.5 Incompatible materials:** Avoid contact with oxidizing materials.

**10.6 Hazardous decomposition products:**

Decomposition products can include and are not limited to: Formaldehyde. Methanol. Ethanol.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data are available.*

### 11.1 Information on toxicological effects

#### Information on likely routes of exposure

Inhalation, Eye contact, Skin contact, Ingestion.

**Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)**

#### Acute Toxicity Endpoints:

##### Acute oral toxicity

##### Information for the Product:

Very low toxicity if swallowed. Swallowing may result in gastrointestinal irritation. May cause nausea and vomiting.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):  
LD50, > 5,000 mg/kg Estimated.

##### Information for components:

##### Ethyl polysilicate

Based on information for a similar material: LD50, Rat, > 7,500 mg/kg

##### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

LD50, Rat, male and female, 892 mg/kg OECD 401 or equivalent

**tetraethyl silicate**

LD50, Rat, male and female, > 2,500 mg/kg OECD Test Guideline 425 No deaths occurred at this concentration.

**methanol**

Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed. LD50, Rat, > 5,000 mg/kg

Lethal Dose, Humans, 340 mg/kg Estimated.

Lethal Dose, Humans, 29 - 237 ml Estimated.

**Dimethyldimethoxysilane**

LD50, Rat, > 2,000 - 5,000 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

**Methyltrimethoxysilane**

LD50, Rat, male and female, 11,685 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

**Acute dermal toxicity**

**Information for the Product:**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):  
LD50, > 2,000 mg/kg Estimated.

**Information for components:**

**Ethyl polysilicate**

Based on information for a similar material: LD50, Rabbit, 4,290 mg/kg

**Bis(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

LD50, Rat, > 2,000 mg/kg

**tetraethyl silicate**

LD50, Rabbit, 5,878 mg/kg

**methanol**

Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death. LD50, Rabbit, 15,800 mg/kg

**Dimethyldimethoxysilane**

The dermal LD50 has not been determined.

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

**Methyltrimethoxysilane**

LD50, Rabbit, male and female, > 9,500 mg/kg OECD 402 or equivalent

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

**Acute inhalation toxicity**

**Information for the Product:**

Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material or mist may cause respiratory irritation. Excessive exposure may cause: Headache. May cause dizziness and drowsiness.

As product: The LC50 has not been determined.

**Information for components:**

**Ethyl polysilicate**

Based on information for a similar material: LC50, Rat, 4 Hour, dust/mist, > 7.35 mg/l

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

As product: The LC50 has not been determined.

**tetraethyl silicate**

Prolonged excessive exposure may cause adverse effects. Vapor may cause irritation of the upper respiratory tract (nose and throat) and lungs.

LC50, Rat, female, 4 Hour, dust/mist, > 16.8 mg/l OECD Test Guideline 403

LC50, Rat, male, 4 Hour, dust/mist, 10 mg/l OECD Test Guideline 403

LC50, Rat, 4 Hour, vapour, 17 mg/l

**methanol**

Easily attainable vapor concentrations may cause serious adverse effects, even death. At lower concentrations: May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

LC50, Rat, 4 Hour, vapour, 3 mg/l

**Dimethyldimethoxysilane**

LC50, Rat, 4 Hour, vapour, > 4.7 mg/l

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

**Methyltrimethoxysilane**

LC50, Rat, male and female, 6 Hour, vapour, > 7605 ppm OECD Test Guideline 403

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

**Skin corrosion/irritation**

Causes skin irritation.

**Information for the Product:**

Based on information for component(s):  
Brief contact may cause skin irritation with local redness.  
May cause drying and flaking of the skin.

**Information for components:**

**Ethyl polysilicate**

Brief contact is essentially nonirritating to skin.

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

Brief contact may cause skin irritation with local redness.

**tetraethyl silicate**

Brief contact may cause moderate skin irritation with local redness.  
May cause drying and flaking of the skin.

**methanol**

Prolonged contact may cause slight skin irritation with local redness.

**Dimethyldimethoxysilane**

Brief contact is essentially nonirritating to skin.

**Methyltrimethoxysilane**

Brief contact may cause slight skin irritation with local redness.



## Serious eye damage/eye irritation

### Information for the Product:

Based on information for component(s):

May cause slight eye irritation.

May cause slight temporary corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

### Information for components:

#### Ethyl polysilicate

May cause eye irritation.

#### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

May cause slight eye irritation.

May cause slight temporary corneal injury.

#### tetraethyl silicate

Based on product testing:

Essentially nonirritating to eyes.

Corneal injury is unlikely.

Based on human experience.

Vapor may cause eye irritation experienced as mild discomfort and redness.

#### methanol

May cause eye irritation.

#### Dimethyldimethoxysilane

Essentially nonirritating to eyes.

#### Methyltrimethoxysilane

May cause slight temporary eye irritation.

Corneal injury is unlikely.

## Sensitization

### For skin sensitization:

May cause an allergic skin reaction.

### Information for the Product:

For skin sensitization:

Contains component(s) which have caused allergic skin sensitization in guinea pigs.

For respiratory sensitization:

No relevant data found.

### Information for components:

**Ethyl polysilicate**

For skin sensitization:

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**tetraethyl silicate**

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**methanol**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Dimethyldimethoxysilane**

For similar material(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Methyltrimethoxysilane**

For skin sensitization:

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

**Information for the Product:**

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

**Information for components:**

**Ethyl polysilicate**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

Available data are inadequate to determine single exposure specific target organ toxicity.

**tetraethyl silicate**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**methanol**

Causes damage to organs.

Target Organs: Eyes, Central nervous system

**Dimethyldimethoxysilane**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Methyltrimethoxysilane**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Aspiration Hazard**

**Information for the Product:**

Based on physical properties, not likely to be an aspiration hazard.

**Information for components:**

**Ethyl polysilicate**

Based on physical properties, not likely to be an aspiration hazard.

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

Based on physical properties, not likely to be an aspiration hazard.

**tetraethyl silicate**

Based on available information, aspiration hazard could not be determined.

**methanol**

May be harmful if swallowed and enters airways.

**Dimethyldimethoxysilane**

Based on physical properties, not likely to be an aspiration hazard.

**Methyltrimethoxysilane**

Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

**Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)**

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

#### Information for the Product:

Contains component(s) which have been reported to cause effects on the following organs in animals:

Kidney.  
Blood  
Liver  
Immune system.  
Respiratory tract.

#### Information for components:

##### **Ethyl polysilicate**

In animals, effects have been reported on the following organs:

Kidney.  
Liver  
Respiratory tract.  
Lung.

##### **Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

In animals, effects have been reported on the following organs:

Blood  
Kidney  
Liver  
Immune system.

##### **tetraethyl silicate**

In animals, effects have been reported on the following organs:

Kidney.

##### **methanol**

Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

##### **Dimethyldimethoxysilane**

In animals, effects have been reported on the following organs:

Liver  
Male reproductive organs.

This material contains dimethyldimethoxysilane. Repeated exposure in rats to dimethyldimethoxysilane resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

##### **Methyltrimethoxysilane**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

#### Carcinogenicity

#### Information for the Product:

Contains a component(s) which did not cause cancer in long-term animal studies which used routes of exposure considered relevant to industrial handling.

**Information for components:**

**Ethyl polysilicate**

No relevant data found.

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

No relevant data found.

**tetraethyl silicate**

No relevant data found.

**methanol**

Did not cause cancer in laboratory animals.

**Dimethyldimethoxysilane**

No relevant data found.

**Methyltrimethoxysilane**

No relevant data found.

**Teratogenicity**

**Information for the Product:**

Contains component(s) which, in laboratory animals, have been toxic to the fetus only at doses toxic to the mother. Contains component(s) which caused birth defects in laboratory animals.

**Information for components:**

**Ethyl polysilicate**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

No relevant data found.

**tetraethyl silicate**

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

**methanol**

Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats.

**Dimethyldimethoxysilane**

Has caused birth defects in laboratory animals.

**Methyltrimethoxysilane**

Did not cause birth defects or any other fetal effects in laboratory animals.

## Reproductive toxicity

### Information for the Product:

Contains component(s) which have interfered with fertility in animal studies.

### Information for components:

#### Ethyl polysilicate

In animal studies, did not interfere with fertility. In animal studies, did not interfere with reproduction.

#### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

No relevant data found.

#### tetraethyl silicate

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

#### methanol

In animal studies, did not interfere with reproduction.

#### Dimethyldimethoxysilane

In animal studies, has been shown to interfere with fertility.

#### Methyltrimethoxysilane

In animal studies, did not interfere with reproduction.

## Mutagenicity

### Information for the Product:

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Genetic toxicity studies in animals were negative for component(s) tested.

### Information for components:

#### Ethyl polysilicate

In vitro genetic toxicity studies were negative.

#### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

#### tetraethyl silicate

In vitro genetic toxicity studies were predominantly negative.

#### methanol

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative in some cases and positive in other cases.

**Dimethyldimethoxysilane**

In vitro genetic toxicity studies were negative.

**Methyltrimethoxysilane**

In vitro genetic toxicity studies were negative in some cases and positive in other cases.  
Animal genetic toxicity studies were negative.

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## SECTION 12: ECOLOGICAL INFORMATION

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*Ecotoxicological information appears in this section when such data are available.*

### 12.1 Toxicity

**Ethyl polysilicate**

**Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

EC50, Brachydanio rerio (zebrafish), semi-static test, 96 Hour, > 119 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 48 Hour, 6.1 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

EC50, Desmodesmus subspicatus (green algae), Growth rate, 72 Hour, > 20 mg/l, OECD Test Guideline 201

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

**Acute toxicity to fish**

Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).

For similar material(s):

LC50, Zebra fish (Danio/Brachydanio rerio), semi-static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna, static test, 48 Hour, 39 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

ErC50, Algae (Scenedesmus subspicatus), Growth rate, 72 Hour, Growth rate, 7.6 mg/l, OECD Test Guideline 201 or Equivalent

For similar material(s):

NOEC, Algae (Scenedesmus subspicatus), Growth rate, 72 Hour, Growth rate, 1.1 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

For similar material(s):

EC50, Bacteria, 3 Hour, Respiration rates., 14 mg/l

**tetraethyl silicate**

**Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).  
LC50, zebra fish (*Brachydanio rerio*), 96 Hour, > 245 mg/l, Directive 67/548/EEC, Annex V, C.1.

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), 48 Hour, > 75 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201

NOEC, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

EC50, activated sludge, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

**methanol**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Bluegill sunfish (*Lepomis macrochirus*), flow-through test, 96 Hour, 15,400 mg/l

**Acute toxicity to aquatic invertebrates**

LC50, *Daphnia magna* (Water flea), 48 Hour, > 10,000 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, *Pseudokirchneriella subcapitata* (green algae), 96 Hour, Growth rate, 22,000 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

IC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

**Chronic toxicity to fish**

NOEC, *Oryzias latipes* (Orange-red killifish), 200 Hour, 15,800 mg/l

**Dimethyldimethoxysilane**

**Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Based on data from similar materials

LC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, > 126 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), 48 Hour, > 119 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

Based on data from similar materials

EC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, > 118 mg/l, OECD Test Guideline 201



**Toxicity to bacteria**

Based on data from similar materials

EC50, 3 Hour, > 100 mg/l, OECD Test Guideline 209

**Methyltrimethoxysilane**

**Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

No toxicity at the limit of solubility

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 3.6 mg/l, OECD Test Guideline 201

No toxicity at the limit of solubility

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, >= 3.6 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

EC10, activated sludge, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), 28 d, number of offspring, >= 10 mg/l

**12.2 Persistence and degradability**

**Ethyl polysilicate**

**Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Fail

**Biodegradation:** 47 %

**Exposure time:** 28 d

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

**Biodegradability:** For similar material(s): Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

For similar material(s): 10-day Window: Fail

**Biodegradation:** 3 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

**tetraethyl silicate**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 98 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301A or Equivalent

**Stability in Water (1/2-life)**

Hydrolysis, DT50, 4.4 Hour, pH 7, Half-life Temperature 25 °C, OECD Test Guideline 111

**methanol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

**Dimethyldimethoxysilane**

**Biodegradability:** For similar material(s): Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

**Biodegradation:** 0 %

**Exposure time:** 28 d

**Stability in Water (1/2-life)**

Hydrolysis, DT50, < 0.6 Hour, pH 7

**Methyltrimethoxysilane**

**Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**Biodegradation:** 54 %

**Exposure time:** 28 d

**Method:** Regulation (EC) No. 440/2008, Annex, C.4-A

**12.3 Bioaccumulative potential**

**Ethyl polysilicate**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 0.04 estimated

**Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane**

**Bioaccumulation:** No relevant data found.

**tetraethyl silicate**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** 3.18 EU Method A.8 (Partition Coefficient)

**methanol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** -0.77 Measured

**Bioconcentration factor (BCF):** < 10 Leuciscus idus (Golden orfe) Measured

**Dimethyldimethoxysilane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** Pow: 2 estimated

**Bioconcentration factor (BCF):** 3.16 Estimated.

**Methyltrimethoxysilane**

**Bioaccumulation:** Bioconcentration potential is low ( $BCF < 100$  or  $\log Pow < 3$ ).  
**Partition coefficient: n-octanol/water(log Pow):** -0.82 Estimated.

#### 12.4 Mobility in soil

##### Ethyl polysilicate

**Partition coefficient (Koc):** 190 OECD Test Guideline 121

##### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

No relevant data found.

##### tetraethyl silicate

No relevant data found.

##### methanol

**Partition coefficient (Koc):** 0.44 Estimated.

##### Dimethyldimethoxysilane

**Partition coefficient (Koc):** 168.6 Estimated.

##### Methyltrimethoxysilane

No relevant data found.

#### 12.5 Results of PBT and vPvB assessment

##### Ethyl polysilicate

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

##### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

##### tetraethyl silicate

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

##### methanol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

##### Dimethyldimethoxysilane

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

##### Methyltrimethoxysilane

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### 12.6 Other adverse effects

##### Ethyl polysilicate

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

##### Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**tetraethyl silicate**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**methanol**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Dimethyldimethoxysilane**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Methyltrimethoxysilane**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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## **SECTION 13: DISPOSAL CONSIDERATIONS**

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### **13.1 Waste treatment methods**

Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

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## **SECTION 14: TRANSPORT INFORMATION**

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### **Classification for ROAD and Rail transport (ADR/RID):**

- |                                   |   |
|-----------------------------------|---|
| 14.1 UN number or ID number       | UN 1993   |
| 14.2 UN proper shipping name      | FLAMMABLE LIQUID, N.O.S.(Methyltrimethoxysilane, Tetraethoxysilane) |
| 14.3 Transport hazard class(es)   | 3   |
| 14.4 Packing group                | III   |
| 14.5 Environmental hazards        | Ethyl polysilicate  |
| 14.6 Special precautions for user | Hazard Identification Number: 30                                    |

### **Classification for INLAND waterways (ADNR/ADN):**

**Consult your Dow contact before transporting by inland waterway**

### **Classification for SEA transport (IMO-IMDG):**

- |                              |   |
|------------------------------|---|
| 14.1 UN number or ID number  | UN 1993   |
| 14.2 UN proper shipping name | FLAMMABLE LIQUID, N.O.S.(Methyltrimethoxysilane, Tetraethoxysilane) |

14.3	Transport hazard class(es)	3
14.4	Packing group	III
14.5	Environmental hazards	Ethyl polysilicate
14.6	Special precautions for user	EmS: F-E, S-E
14.7	Maritime transport in bulk according to IMO instruments	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

14.1	UN number or ID number	UN 1993
14.2	UN proper shipping name	Flammable liquid, n.o.s.(Methyltrimethoxysilane, Tetraethoxysilane)
14.3	Transport hazard class(es)	3
14.4	Packing group	III
14.5	Environmental hazards	Not applicable
14.6	Special precautions for user	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## SECTION 15: REGULATORY INFORMATION

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

#### UK REACH - UK Statutory Instruments 2019 No.758 as amended

This product contains only components that have been either registered, notified for downstream user import (DUIN), are exempt from registration, are regarded as registered or are not subject to registration according to UK Statutory Instruments 2019 No.758 as amended (UK REACH). Polymers are exempted from registration under REACH. All relevant starting materials and additives have been registered, notified for downstream user import (DUIN) or are exempt from registration according to UK Statutory Instruments 2019 No.758 as amended (UK REACH). The aforementioned indications of the UK REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

#### UK REACH List of restrictions (Annex 17)

Conditions of restriction for the following entries should be considered:

II

Number on list 3  
Bis[(2-ethyl-2,5-dimethylhexanoyl)oxy](dimethyl)stannane  
(Number on list 20)  
methanol (Number on list 69)

#### Control of Major Accident Hazards Regulations 2015 (COMAH)

Listed in Regulation: FLAMMABLE LIQUIDS

Number in Regulation: P5c

5,000 t

50,000 t

#### Control of Major Accident Hazards Regulations 2015 (COMAH)

Listed in Regulation: ENVIRONMENTAL HAZARDS

Number in Regulation: E2

200 t

500 t

### 15.2 Chemical safety assessment

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## SECTION 16: OTHER INFORMATION

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

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H370	Causes damage to organs.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

#### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008

Flam. Liq. - 3 - H226 - Based on product data or assessment

Skin Irrit. - 2 - H315 - Calculation method

Skin Sens. - 1 - H317 - Calculation method

Aquatic Chronic - 2 - H411 - Calculation method

#### Revision

Identification Number: 4107688 / A279 / Issue Date: 30.12.2022 / Version: 6.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
Dow IHG	Dow Industrial Hygiene Guideline
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
STEL	Short-term exposure limit
TWA	Time weighted average
Acute Tox.	Acute toxicity
Aquatic Chronic	Long-term (chronic) aquatic hazard
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation
STOT SE	Specific target organ toxicity - single exposure

**Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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