SAFETY DATA SHEET

Date of issue/Date of revision : 21 January 2026 **Version** : 6

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

1.1 Product identifier

Product name : SIGMAGLIDE 2390 HARDENER

Product code : 000001194863

Other means of identification

00467225; 00470776 ; 52390-BHARD/4L

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

Product use : Professional applications, Used by spraying.

Use of the substance/ mixture : Hardener.; Coating.

Uses advised against : Product is not intended, labelled or packaged for consumer use.

1.3 Details of the supplier of the safety data sheet

PPG Coatings Belgium BV/SRL
Tweemontstraat 104
B-2100 Deurne
Belgium
Telephone +32-33606311
Fax +32-33606435

e-mail address of person responsible for this SDS : Product.Stewardship.EMEA@ppg.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Poison Information Centre; emergency telephone, public + 45 82 12 12 12 (health sector +45 35 31 55 55)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Flam. Liq. 3, H226
Acute Tox. 4, H332
Skin Irrit. 2, H315
Eye Irrit. 2, H319
Skin Sens. 1, H317
Muta. 2, H341
Repr. 1B, H360FD
STOT SE 2, H371
STOT SE 3, H335
STOT RE 2, H373

SECTION 2: Hazards identification

Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Flammable liquid and vapour.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause respiratory irritation.
Suspected of causing genetic defects.
May damage fertility. May damage the unborn child.
May cause damage to organs.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment.

Response : Collect spillage.

Storage : Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

P280, P210, P273, P391, P403 + P233, P501

Hazardous ingredients tetraethyl silicate; pentane-2,4-dione and dibutylbis(pentane-2,4-dionato-O,O')tin

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

SECTION 2: Hazards identification

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture contains substances that are assessed to be a PBT or a vPvB, refer to Section 3.2.

Product meets the criteria for endocrine disrupting properties according to Regulation (EC) No. 1907/2006. : Based on available data, the classification criteria are not met.

Other hazards which do not result in classification : Prolonged or repeated contact may dry skin and cause irritation.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	% by weight	Classification	Specific Conc. Limits, M-factors and ATEs	Type
tetraethyl silicate	REACH #: 01-2119496195-28 EC: 201-083-8 CAS: 78-10-4 Index: 014-005-00-0	≥25 - ≤48	Flam. Liq. 3, H226 Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335	ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
pentane-2,4-dione	REACH #: 01-2119458968-15 EC: 204-634-0 CAS: 123-54-6 Index: 606-029-00-0	≥25 - ≤27	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 3, H331	ATE [Oral] = 570 mg/kg ATE [Dermal] = 790 mg/kg ATE [Inhalation (vapours)] = 5.1 mg/l	[1]
dibutylbis(pentane-2,4-dionato-O,O')tin	REACH #: 01-2119557817-24 EC: 245-152-0 CAS: 22673-19-4 Index: 650-056-00-0	≤1.9	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Repr. 1B, H360FD STOT SE 1, H370 STOT RE 1, H372 (immune system) Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 1864 mg/kg M [Acute] = 1 M [Chronic] = 1	[1]
decamethylcyclopentasiloxane	REACH #: 01-2119511367-43 EC: 208-764-9 CAS: 541-02-6	≤0.30	Not classified.	-	[3] [4]
dodecamethylcyclohexasiloxane	REACH #: 01-2119517435-42 EC: 208-762-8 CAS: 540-97-6	≤0.30	Not classified.	-	[3] [4]
octamethylcyclotetrasiloxane	REACH #: 01-2119529238-36 EC: 209-136-7	≤0.30	Repr. 2, H361f Aquatic Chronic 1, H410	M [Chronic] = 10	[1] [3] [4]

SECTION 3: Composition/information on ingredients

	CAS: 556-67-2 Index: 014-018-00-1		**See Section 16 for the full text of the H statements declared above.**		

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Occupational exposure limits, if available, are listed in Section 8.

SUB codes represent substances without registered CAS Numbers.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : May cause damage to organs following a single exposure if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

SECTION 4: First aid measures

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

5.3 Advice for firefighters

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

SECTION 7: Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

See Section 1.2 for Identified uses.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
tetraethyl silicate	**Working Environment Authority (Denmark, 12/2024)** TWA 8 hours: 5 ppm. TWA 8 hours: 44 mg/m³. STEL 15 minutes: 88 mg/m³. STEL 15 minutes: 10 ppm.

Recommended monitoring procedures : 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.

DNELs/DMELs

Product/ingredient name	Exposure		Value
tetraethyl silicate	DNEL - General population - Long term - Dermal	*Systemic*	1.8 mg/kg bw/day
	DNEL - General population - Short term - Inhalation	*Local*	5.3 mg/m³
	DNEL - General population - Long term - Inhalation	*Local*	5.3 mg/m³
	DNEL - General population - Short term - Inhalation	*Systemic*	5.3 mg/m³
	DNEL - General population - Long term -	*Systemic*	5.3 mg/m³

SECTION 8: Exposure controls/personal protection

	Inhalation		
	DNEL - Workers - Long term - Dermal	*Systemic*	6.3 mg/kg bw/day
	DNEL - Workers - Short term - Inhalation	*Local*	44 mg/m³
	DNEL - Workers - Long term - Inhalation	*Local*	44 mg/m³
	DNEL - Workers - Short term - Inhalation	*Systemic*	44 mg/m³
	DNEL - Workers - Long term - Inhalation	*Systemic*	44 mg/m³
pentane-2,4-dione	DNEL - General population - Long term - Oral	*Systemic*	7 mg/kg bw/day
	DNEL - Workers - Long term - Dermal	*Systemic*	12 mg/kg bw/day
	DNEL - Workers - Long term - Inhalation	*Systemic*	84 mg/m³
dibutylbis(pentane-2,4-dionato-O,O')tin	DNEL - General population - Long term - Oral	*Systemic*	0.002 mg/kg bw/day
	DNEL - General population - Long term - Inhalation	*Systemic*	0.003 mg/m³
	DNEL - General population - Short term - Oral	*Systemic*	0.01 mg/kg bw/day
	DNEL - Workers - Long term - Inhalation	*Systemic*	0.01 mg/m³
	DNEL - General population - Short term - Inhalation	*Systemic*	0.02 mg/m³
	DNEL - Workers - Short term - Inhalation	*Systemic*	0.07 mg/m³
	DNEL - General population - Long term - Dermal	*Systemic*	0.08 mg/kg bw/day
	DNEL - Workers - Long term - Dermal	*Systemic*	0.2 mg/kg bw/day
	DNEL - General population - Short term - Dermal	*Systemic*	0.5 mg/kg bw/day
	DNEL - Workers - Short term - Dermal	*Systemic*	1 mg/kg bw/day
decamethylcyclopentasiloxane	DNEL - General population - Long term - Inhalation	*Local*	4.3 mg/m³
	DNEL - General population - Long term - Oral	*Systemic*	5 mg/kg bw/day
	DNEL - General population - Long term - Inhalation	*Systemic*	17.3 mg/m³
	DNEL - Workers - Long term - Inhalation	*Local*	24.2 mg/m³
	DNEL - Workers - Long term - Inhalation	*Systemic*	97.3 mg/m³
dodecamethylcyclohexasiloxane	DNEL - General population - Long term - Inhalation	*Local*	0.3 mg/m³
	DNEL - Workers - Long term - Inhalation	*Local*	1.22 mg/m³
	DNEL - General population - Short term - Inhalation	*Local*	1.5 mg/m³
	DNEL - Workers - Short term - Inhalation	*Local*	6.1 mg/m³
octamethylcyclotetrasiloxane	DNEL - General population - Long term - Oral	*Systemic*	3.7 mg/kg bw/day
	DNEL - General population - Long term - Inhalation	*Local*	13 mg/m³
	DNEL - General population - Long term - Inhalation	*Systemic*	13 mg/m³
	DNEL - Workers - Long term - Inhalation	*Local*	73 mg/m³
	DNEL - Workers - Long term - Inhalation	*Systemic*	73 mg/m³

PNECs

Product/ingredient name	Compartment Detail - Method	Value
pentane-2,4-dione	Fresh water	0.026 mg/l
	Fresh water sediment	0.155 mg/kg dwt
	Marine water	0.0026 mg/l
	Marine water sediment	0.0155 mg/kg dwt
	Soil	0.01582 mg/kg dwt
	Sewage Treatment Plant	1.32 mg/l

8.2 Exposure controls

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles. Use eye protection according to EN 166.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

Other skin protection Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Wear a respirator conforming to EN140. Filter type: organic vapour (Type A) and particulate filter P3

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Colourless.

Odour : Characteristic. [Slight]

Melting point/freezing point : Not determined.

Boiling point or initial boiling point and boiling range : >37.78°C

Flammability : Not determined. There are no data available on the mixture itself.

Lower and upper explosion limit : Not available.

Flash point : Closed cup: 26°C

Auto-ignition temperature :

Ingredient name	°C	°F	Method
pentane-2,4-dione	340	644	

Decomposition temperature : Stable under recommended storage and handling conditions (see Section 7).

pH : Not applicable. insoluble in water.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): >21 mm^2/s

Viscosity : 30 - <40 s (ISO 6mm)

Solubility :

Media	Result
cold water	Not soluble

Partition coefficient n-octanol/water (log Pow) : Not applicable.

Vapour pressure :

Ingredient name	Vapour Pressure at 20˚C			Vapour pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
pentane-2,4-dione	6.97557	0.93				

Relative density : 0.98

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosive properties : The product itself is not explosive, but the formation of an explosible mixture of vapour or dust with air is possible.

Oxidising properties : Product does not present an oxidizing hazard.

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

10.5 Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.

10.6 Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides metal oxide/oxides

SECTION 11: Toxicological information

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

The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly.

Harmful if inhaled.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May damage fertility.
May damage the unborn child.
Suspected of causing genetic defects.
May cause damage to organs.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Acute toxicity

Product/ingredient name	Result	Dose / Exposure
tetraethyl silicate	Rat - Oral - LD50	6270 mg/kg
	Rabbit - Dermal - LD50	5.878 g/kg
	Rat - Inhalation - LC50 Dusts and mists	10 to 16 mg/l [4 hours]
pentane-2,4-dione	Rat - Oral - LD50	570 mg/kg
	Rat - Dermal - LD50	790 mg/kg
	Rat - Inhalation - LC50 Vapour	5.1 mg/l [4 hours]
dibutylbis(pentane-2,4-dionato-O, O')tin	Rat - Oral - LD50	1864 mg/kg
	Rat - Dermal - LD50	>2000 mg/kg
decamethylcyclopentasiloxane	Rabbit - Dermal - LD50	>15.3 g/kg
	Rat - Oral - LD50	>24134 mg/kg
	Rat - Inhalation - LC50 Dusts and mists	8.67 mg/l [4 hours]
dodecamethylcyclohexasiloxane	Rat - Oral - LD50	>50 g/kg
	Toxic effects: Behavioral - Somnolence (general depressed activity) Lung, Thorax, or Respiration - Respiratory stimulation Lung, Thorax, or Respiration - Other changes	
octamethylcyclotetrasiloxane	Rat - Oral - LD50	>4800 mg/kg
	Rat - Dermal - LD50	>2375 mg/kg
	Rat - Inhalation - LC50 Vapour	36 g/m³ [4 hours]

SECTION 11: Toxicological information

	Toxic effects: Behavioral - Excitement Lung, Thorax, or Respiration - Dyspnea Other - Hair	

Acute toxicity estimates

Route	ATE value
Oral	2221.45 mg/kg
Dermal	3144.44 mg/kg
Inhalation (vapours)	11.37 mg/l

Conclusion/Summary : Harmful if inhaled.

Irritation/Corrosion

Conclusion/Summary

Skin : Causes skin irritation.

Eyes : Causes serious eye irritation.

Respiratory : Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Conclusion/Summary

Skin : May cause an allergic skin reaction.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

May damage fertility.
May damage the unborn child.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
tetraethyl silicate	Category 3	-	Respiratory tract irritation
dibutylbis(pentane-2,4-dionato-O,O')tin	Category 1	-	-

Conclusion/Summary :

May cause damage to organs.
May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
dibutylbis(pentane-2,4-dionato-O,O')tin	Category 1	-	immune system

Conclusion/Summary :

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure : Not available.

Potential acute health effects

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Ingestion : May cause damage to organs following a single exposure if swallowed.

SECTION 11: Toxicological information

Skin contact : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Eye contact : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced foetal weight
increase in foetal deaths
skeletal malformations

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : Suspected of causing genetic defects.

Reproductive toxicity : May damage fertility. May damage the unborn child.

Other information : Prolonged or repeated contact may dry skin and cause irritation. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapour/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

SECTION 11: Toxicological information

The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

12.1 Toxicity

Product/ingredient name	Result	Species	Dose / Exposure
octamethylcyclotetrasiloxane	Chronic - NOEC - Fresh water	Daphnia - Water flea - *Daphnia magna*	100 mg/l [21 days]

Conclusion/Summary : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Based on available data, the classification criteria are not met.

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
tetraethyl silicate	3.18	-	Low
pentane-2,4-dione	0.68	-	Low
decamethylcyclopentasiloxane	8.023	-	High
dodecamethylcyclohexasiloxane	8.87	1660 [OECD 305]	High
octamethylcyclotetrasiloxane	6.488	-	High

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logKoc	Koc
tetraethyl silicate	1.7	52.828
pentane-2,4-dione	1.1	12.6222
decamethylcyclopentasiloxane	3.9	8156.49
dodecamethylcyclohexasiloxane	4.4	25167.8
octamethylcyclotetrasiloxane	3.5	3064.9

12.5 Results of PBT and vPvB assessment

SECTION 12: Ecological information

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
tetraethyl silicate	No	N/A	N/A	No	N/A	N/A	N/A
pentane-2,4-dione	No	N/A	N/A	No	N/A	N/A	N/A
decamethylcyclopentasiloxane	SVHC (Recommended)	Specified	Specified	Specified	SVHC (Recommended)	Specified	Specified
dodecamethylcyclohexasiloxane	SVHC (Recommended)	Specified	Specified	Specified	SVHC (Recommended)	Specified	Specified
octamethylcyclotetrasiloxane	SVHC (Recommended)	Specified	Specified	Specified	SVHC (Recommended)	Specified	Specified

12.6 Endocrine disrupting properties

The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste :

European waste catalogue (EWC)

Waste code	Waste designation
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	European waste catalogue (EWC)
Container	15 01 06 mixed packaging

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1263	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT	PAINT	PAINT	PAINT
14.3 Transport hazard class(es)	3	3	3	3
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	Not applicable.	(dibutylbis(pentane-2,4-dionato-O,O')tin)	Not applicable.

Additional information

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Tunnel code : (D/E)

ADN : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not applicable.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

SECTION 15: Regulatory information

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Toxic to reproduction	dibutylbis(pentane-2,4-dionato-O,O')tin	Candidate	D(2020) 4578-DC	6/25/2020
PBT	decamethylcyclopentasiloxane	Recommended	10th recommendation	4/14/2021
	dodecamethylcyclohexasiloxane	Recommended	10th recommendation	4/14/2021
	octamethylcyclotetrasiloxane	Recommended	10th recommendation	4/14/2021
vPvB	decamethylcyclopentasiloxane	Recommended	10th recommendation	4/14/2021
	dodecamethylcyclohexasiloxane	Recommended	10th recommendation	4/14/2021
	octamethylcyclotetrasiloxane	Recommended	10th recommendation	4/14/2021

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	Entry Number (REACH)
SIGMAGLIDE 2390 HARDENER	3 30
dibutylbis(pentane-2,4-dionato-O,O')tin	20 30
decamethylcyclopentasiloxane	70
dodecamethylcyclohexasiloxane	70
octamethylcyclotetrasiloxane	70

Labelling : Restricted to professional users.

Other EU regulations

Explosive precursors : Not applicable.

Ozone depleting substances (EU 2024/590)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category
P5c E2

National regulations

Fire class : II-1

Executive Order No. 1795/2015

Ingredient name	Annex I Section A	Annex I Section B
dibutylbis(pentane-2,4-dionato-O,O')tin	-	Muta. 2, H341

MAL-code : 5-3

SECTION 15: Regulatory information

Protection based on MAL : **According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:**

General: Gloves must be worn for all work that may result in soiling. Apron/coveralls/ protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. A face shield must be worn in work involving spattering if a full mask is not required. In this case, other recommended use of eye protection is not required.

In all spraying operations in which there is return spray, the following must be worn: respiratory protection and arm protectors/apron/coveralls/protective clothing as appropriate or as instructed.

MAL-code: 5-3
Application: When spraying in new* booths if the operator is outside the spray zone. During non-atomising spraying in existing* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.

- Air-supplied full mask must be worn.

When using scraper or knife, brush, roller, etc, for pre- and post-treatments in cabins or booths of the existing* facility type, if the operator is inside the spray zone. During downtimes, cleaning and repair in closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

- Air-supplied full mask and coveralls must be worn.

When spraying in existing* spray booths, if the operator is outside the spray zone.

- Air-supplied full mask, arm protectors and apron must be worn.

During all spraying where atomisation occurs in cabins or spray booths where the operator is inside the spray zone and during spraying outside a closed facility, cabin or booth.

- Air-supplied full mask, coveralls and hood must be worn.

Drying: Items for drying/drying ovens that are temporarily placed on such things as rack trolleys, etc, must be equipped with a mechanical exhaust system to prevent fumes from wet items from passing through workers' inhalation zone.

Polishing: When polishing treated surfaces, a mask with dust filter must be worn. When machine grinding, eye protection must be worn. Work gloves must always be worn.

Caution The regulations contain other stipulations in addition to the above.

*See Regulations.

Restrictions on use : Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.

SECTION 15: Regulatory information

List of undesirable substances : Not listed

15.2 Chemical safety assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent and Very Bioaccumulative
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Muta. 2, H341	Calculation method
Repr. 1B, H360FD	Calculation method
STOT SE 2, H371	Calculation method
STOT SE 3, H335	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

SECTION 16: Other information

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H360FD	May damage fertility. May damage the unborn child.
H361f	Suspected of damaging fertility.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1C	SKIN CORROSION/IRRITATION - Category 1C
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1
STOT SE 2	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

History

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SECTION 16: Other information

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by us, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.