

SAFETY DATA SHEET

Date of issue/Date of revision

: 1 May 2025

Version

: 2.04



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

1.1 Product identifier

Product name : SIGMASHIELD 1200 LT HARDENER YELLOW

Product code : 000001099362

Other means of identification

00241643

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.

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]

Acute Tox. 4, H302

Acute Tox. 3, H311

Acute Tox. 3, H331

Skin Corr. 1A, H314

Eye Dam. 1, H318

Skin Sens. 1, H317

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.

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SECTION 2: Hazards identification

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

2.2 Label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : Harmful if swallowed.
Toxic in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves, protective clothing and eye or face protection. Avoid release to the environment.

Response : Collect spillage. IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

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

P280, P273, P391, P304 + P310, P301 + P310, P501

Hazardous ingredients : 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine); benzyl alcohol; N-(3-(trimethoxysilyl)propyl)ethylenediamine and 3-aminopropyldimethylamine

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

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

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

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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
2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	REACH #: 01-2119497829-12 EC: 229-962-1 CAS: 6864-37-5 Index: 612-110-00-1	≥50 - ≤75	Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 3, H331 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Chronic 2, H411	ATE [Oral] = 500 mg/kg ATE [Dermal] = 300 mg/kg ATE [Inhalation (dusts and mists)] = 0.5 mg/l	[1]
benzyl alcohol	REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6 Index: 603-057-00-5	≥5.0 - ≤10	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1B, H317	ATE [Oral] = 1200 mg/kg	[1]
Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol	CAS: 445498-00-0	≥5.0 - ≤10	Acute Tox. 4, H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 500 mg/kg M [Acute] = 1 M [Chronic] = 1	[1]
N-(3-(trimethoxysilyl)propyl) ethylenediamine	REACH #: 01-2119970215-39 EC: 217-164-6 CAS: 1760-24-3	≥1.0 - ≤5.0	Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335	-	[1]
2,4,6-tris (dimethylaminomethyl) phenol	REACH #: 01-2119560597-27 EC: 202-013-9 CAS: 90-72-2	≥1.0 - ≤5.0	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1C, H314 Eye Dam. 1, H318	ATE [Oral] = 1200 mg/kg ATE [Dermal] = 1280 mg/kg	[1]
3-aminopropyldimethylamine	REACH #: 01-2119486842-27 EC: 203-680-9 CAS: 109-55-7 Index: 612-061-00-6	≤0.30	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 See Section 16 for the full text of the H statements declared above.	ATE [Oral] = 410 mg/kg ATE [Dermal] = 1100 mg/kg	[1]

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

SUB codes represent substances without registered CAS Numbers.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|-----------------------------------|---|
| Eye contact | : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention. |
| 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 damage. |
| Inhalation | : Toxic if inhaled. |
| Skin contact | : Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction. |
| Ingestion | : Harmful if swallowed. |

Over-exposure signs/symptoms

- | | |
|---------------------|--|
| Eye contact | : Adverse symptoms may include the following:
pain
watering
redness |
| Inhalation | : No specific data. |
| Skin contact | : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur |
| Ingestion | : Adverse symptoms may include the following:
stomach pains |

4.3 Indication of any immediate medical attention and special treatment needed

- | | |
|----------------------------|---|
| Notes to physician | : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | : No specific treatment. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|---------------------------------------|---|
| Suitable extinguishing media | : Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | : None known. |

5.2 Special hazards arising from the substance or mixture

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SECTION 5: Firefighting measures

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. 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
nitrogen oxides
metal oxide/oxides
Formaldehyde.
- 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.
- 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. Do not breathe 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. 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. 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.

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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. 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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- 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 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. 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
- No exposure limit value known.
- 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

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SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure	Value
2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	DNEL - General population - Long term - Oral	Effects: Systemic 0.008 mg/kg bw/day
	DNEL - Workers - Long term - Dermal	Effects: Systemic 0.05 mg/kg bw/day
	DNEL - Workers - Long term - Inhalation	Effects: Systemic 0.6 mg/m ³
	DNEL - Workers - Long term - Inhalation	Effects: Local 1 mg/m ³
	DNEL - General population - Long term - Oral	Effects: Systemic 4 mg/kg bw/day
	DNEL - General population - Long term - Dermal	Effects: Systemic 4 mg/kg bw/day
	DNEL - General population - Long term - Inhalation	Effects: Systemic 5.4 mg/m ³
	DNEL - Workers - Long term - Dermal	Effects: Systemic 8 mg/kg bw/day
	DNEL - General population - Short term - Oral	Effects: Systemic 20 mg/kg bw/day
	DNEL - General population - Short term - Dermal	Effects: Systemic 20 mg/kg bw/day
	DNEL - Workers - Long term - Inhalation	Effects: Systemic 22 mg/m ³
	DNEL - General population - Short term - Inhalation	Effects: Systemic 27 mg/m ³
	DNEL - Workers - Short term - Dermal	Effects: Systemic 40 mg/kg bw/day
	DNEL - Workers - Short term - Inhalation	Effects: Systemic 110 mg/m ³
	DNEL - General population - Long term - Inhalation	Effects: Local 0.1 mg/m ³
	DNEL - Workers - Long term - Inhalation	Effects: Local 0.6 mg/m ³
	DNEL - General population - Long term - Oral	Effects: Systemic 4 mg/kg bw/day
	DNEL - General population - Short term - Inhalation	Effects: Local 4 mg/m ³
benzyl alcohol	DNEL - Workers - Short term - Inhalation	Effects: Local 5.36 mg/m ³
	DNEL - General population - Long term - Inhalation	Effects: Systemic 26 mg/m ³
	DNEL - Workers - Long term - Inhalation	Effects: Systemic 130 mg/m ³
	DNEL - General population - Short term - Inhalation	Effects: Systemic 26400 mg/m ³
	DNEL - General population - Long term - Oral	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Long term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - General population - Long term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - Workers - Long term - Dermal	Effects: Systemic 0.15 mg/kg bw/day
N-(3-(trimethoxysilyl) propyl)ethylenediamine	DNEL - Workers - Long term - Inhalation	Effects: Systemic 0.53 mg/m ³
	DNEL - Workers - Short term - Dermal	Effects: Systemic 0.6 mg/kg bw/day
	DNEL - Workers - Short term - Inhalation	Effects: Systemic 2.1 mg/m ³
	DNEL - Workers - Long term - Inhalation	Effects: Systemic 1.2 mg/m ³
	DNEL - General population - Long term - Oral	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Long term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - General population - Long term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - Workers - Long term - Dermal	Effects: Systemic 0.15 mg/kg bw/day
2,4,6-tris (dimethylaminomethyl) phenol	DNEL - Workers - Long term - Inhalation	Effects: Systemic 0.53 mg/m ³
	DNEL - Workers - Short term - Dermal	Effects: Systemic 0.6 mg/kg bw/day
	DNEL - Workers - Short term - Inhalation	Effects: Systemic 2.1 mg/m ³
	DNEL - Workers - Long term - Inhalation	Effects: Systemic 1.2 mg/m ³
	DNEL - General population - Long term - Oral	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Long term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - General population - Long term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - Workers - Long term - Dermal	Effects: Systemic 0.15 mg/kg bw/day
3-aminopropyldimethylamine	DNEL - Workers - Long term - Inhalation	Effects: Systemic 0.53 mg/m ³
	DNEL - Workers - Short term - Dermal	Effects: Systemic 0.6 mg/kg bw/day
	DNEL - Workers - Short term - Inhalation	Effects: Systemic 2.1 mg/m ³
	DNEL - Workers - Long term - Inhalation	Effects: Systemic 1.2 mg/m ³
	DNEL - General population - Long term - Oral	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Long term - Dermal	Effects: Systemic 0.075 mg/kg bw/day
	DNEL - General population - Short term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - General population - Long term - Inhalation	Effects: Systemic 0.13 mg/m ³
	DNEL - Workers - Long term - Dermal	Effects: Systemic 0.15 mg/kg bw/day

PNECs

Product/ingredient name	Compartment Detail - Method	Value
3-aminopropyldimethylamine	Fresh water - Assessment Factors	0.034 mg/l
	Marine water - Assessment Factors	0.003 mg/l
	Sewage Treatment Plant - Assessment Factors	69.5 mg/l
	Fresh water sediment - Equilibrium Partitioning	0.221 mg/kg dwt
	Marine water sediment - Equilibrium Partitioning	0.022 mg/kg dwt
	Soil - Equilibrium Partitioning	0.024 mg/kg dwt

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SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

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.

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 and face shield. 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 : nitrile neoprene

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.

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.

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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

<u>Appearance</u>	
Physical state	: Liquid.
Colour	: Yellow.
Odour	: Amine-like.
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: 107°C
Auto-ignition temperature	: 275°C (527°F)
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 mm²/s
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
2,4,6-tris (dimethylaminomethyl) phenol	0.056	0.0075	EU A.4			

Relative density	: 0.97
<u>Particle characteristics</u>	
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.	

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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 nitrogen oxides Formaldehyde. 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.

 Toxic in contact with skin or if inhaled.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Acute toxicity

Product/ingredient name	Result	Dose / Exposure
 2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	Rat - Oral - LD50	>0.32 g/kg
benzyl alcohol	Rabbit - Dermal - LD50 Rat - Inhalation - LC50 Dusts and mists Rabbit - Dermal - LD50 Rat - Oral - LD50	>0.2 g/kg 420 mg/m³ [4 hours] >2000 mg/kg 1200 mg/kg
N-(3-(trimethoxysilyl)propyl) ethylenediamine	Rat - Inhalation - LC50 Dusts and mists Rat - Oral - LD50 <i>Toxic effects:</i> Behavioral - Tremor Gastrointestinal - Hypermotility, diarrhea Gastrointestinal - Other changes	>5 mg/l [4 hours] 2413 mg/kg
2,4,6-tris(dimethylaminomethyl) phenol	Rabbit - Dermal - LD50 Rat - Dermal - LD50 Rat - Oral - LD50 <i>Toxic effects:</i> Peripheral Nerve and Sensation - Flaccid paralysis without anesthesia (usually neuromuscular blockage) Lung, Thorax, or Respiration - Dyspnea	>2000 mg/kg 1280 mg/kg 1200 mg/kg
3-aminopropyldimethylamine	Rat - Oral - LD50 Rabbit - Dermal - LD50	410 mg/kg >1000 mg/kg

Acute toxicity estimates

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SECTION 11: Toxicological information

Route	ATE value
☒ Oral	574.78 mg/kg
☐ Dermal	407.59 mg/kg
☐ Inhalation (dusts and mists)	0.69 mg/l

Conclusion/Summary : ☒ Toxic in contact with skin or if inhaled.
Harmful if swallowed.

Irritation/Corrosion

Conclusion/Summary

Skin : ☒ Causes severe burns.

Eyes : ☒ Causes serious eye damage.

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

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

Carcinogenicity

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

Reproductive toxicity

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

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
☒ N-(3-(trimethoxysilyl)propyl)ethylenediamine	Category 3	-	Respiratory tract irritation

Conclusion/Summary :

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

Specific target organ toxicity (repeated exposure)

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

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 : Toxic if inhaled.

Ingestion : Harmful if swallowed.

Skin contact : Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.

Eye contact : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

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SECTION 11: Toxicological information

Eye contact : Adverse symptoms may include the following:
pain
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 : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.
Other information : 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. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C/140F. Exposure to amine vapor has been reported to cause transient corneal edema described as blue haze, halo effect, foggy or blurred vision for several hours. This condition is typically temporary and does not cause permanent visual effects. When the proper eye protection specified in Section 8 is worn, exposure is significantly reduced and the condition has not been observed.

11.2 Information on other hazards

11.2.1 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.

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

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SECTION 12: Ecological information

Product/ingredient name	Result	Species	Dose / Exposure
N-(3-(trimethoxysilyl)propyl) ethylenediamine	EC50	Fish	597 mg/l [96 hours]
2,4,6-tris (dimethylaminomethyl)phenol	Acute - LC50	Daphnia	>100 mg/l [48 hours]
3-aminopropyldimethylamine	Acute - LC50	Fish	>100 mg/l [96 hours]
	Acute - LC50	Fish	122 mg/l [96 hours]

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

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose / Inoculum
2,4,6-tris (dimethylaminomethyl)phenol	OECD [Ready Biodegradability - Closed Bottle Test]	4% [28 days] - Not readily	
3-aminopropyldimethylamine	OECD 301D	69% [20 days] - Readily	

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily
2,4,6-tris (dimethylaminomethyl)phenol	-	-	Not readily
3-aminopropyldimethylamine	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	1.8	-	Low
benzyl alcohol	0.87	-	Low
2,4,6-tris(dimethylaminomethyl)phenol	0.219	-	Low
3-aminopropyldimethylamine	-0.352	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logK _{oc}	K _{oc}
2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	2.5	313.55
benzyl alcohol	1.1	12.6442
N-(3-(trimethoxysilyl)propyl)ethylenediamine	1.54	34.5002
2,4,6-tris(dimethylaminomethyl)phenol	2.72	525.589
3-aminopropyldimethylamine	1.67	46.284

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

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SECTION 12: Ecological 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.

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. 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	UN2922	UN2922	UN2922	UN2922
14.2 UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)	CORROSIVE LIQUID, TOXIC, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)	CORROSIVE LIQUID, TOXIC, N.O.S. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)	Corrosive liquid, toxic, n.o.s. (2,2'-dimethyl-4,4'-methylenebis (cyclohexylamine), 2,4,6-tris (dimethylaminomethyl) phenol)
14.3 Transport hazard class(es)	8 (6.1)	8 (6.1)	8 (6.1)	8 (6.1)
English (GB)		Denmark		14/18

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SECTION 14: Transport information

14.4 Packing group	II	II	II	II
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	Not applicable.	(2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine))	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 : 
- 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](#)

None of the components are listed.

[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)
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Labelling : Not applicable.

Explosive precursors : Not applicable.

[Ozone depleting substances \(EU 2024/590\)](#)

Not listed.

[Seveso Directive](#)

This product is controlled under the Seveso Directive.

[Danger criteria](#)

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SECTION 15: Regulatory information

Category
H2 E2

National regulations

Product registration number	: PR-2496274
Fire class	: W-1
MAL-code	: 5-6
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: 5-6

Application: When using scraper or knife, brush, roller etc. for pre- and post-treatments in a spray booth where the operator is outside the spray zone and when working in similar new* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in new* booths and cabins with non-atomizing guns.

- Protective clothing must be worn.

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 spraying in existing* spray booths, if the operator is outside the spray zone. 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. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin. 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 protective clothing must be worn.

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

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

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SECTION 15: Regulatory information

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.
List of undesirable substances	: 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]

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SECTION 16: Other information

Classification	Justification
Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 3, H331 Skin Corr. 1A, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411	Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H226 H302 H311 H312 H314 H317 H318 H319 H331 H335 H400 H410 H411	Flammable liquid and vapour. Harmful if swallowed. Toxic in contact with skin. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. Causes serious eye irritation. Toxic if inhaled. May cause respiratory irritation. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]

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