

# SAFETY DATA SHEET



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: 4.01

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

### 1.1 Product identifier

**Product name** : SIGMATHERM 230 HARDENER

**Product code** : 00273018

**Product type** : Liquid.

**Other means of identification**

Not available.

### 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** : 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

Sigma Paint Saudi Arabia Ltd.  
PO Box 7509, Dammam 31472  
Saudi Arabia  
Tel: 00966 138 47 31 00  
Fax: 00966 138 47 17 34

**e-mail address of person  
responsible for this SDS** : PS.ACEMEA@ppg.com

**1.4 Emergency telephone  
number** : 00966 138473100 extn 1001

## 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  
Skin Corr. 1C, H314  
Eye Dam. 1, H318  
Skin Sens. 1, H317  
Repr. 1B, H360F  
STOT SE 3, H335  
Asp. Tox. 1, H304  
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

**SECTION 2: Hazards identification****Hazard pictograms****Signal word**

: Danger

**Hazard statements**

: Flammable liquid and vapour.  
 May be fatal if swallowed and enters airways.  
 Causes severe skin burns and eye damage.  
 May cause an allergic skin reaction.  
 May cause respiratory irritation.  
 May damage fertility.  
 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. IF exposed or concerned: Get medical advice or attention.

**Storage**

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

**Disposal**

: Not applicable.

**Hazardous ingredients**

: xylene  
 2-methylpropan-1-ol  
 2,4,6-tris(dimethylaminomethyl)phenol  
 N-(3-(trimethoxysilyl)propyl)ethylenediamine  
 m-phenylenebis(methylamine)  
 4,4'-isopropylidenediphenol  
 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**

: 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****Product meets the criteria for PBT or vPvB**

: 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**

: 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 Regulation (EC) No. 1272/2008 [CLP]	Type
benzyl alcohol	REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6 Index: 603-057-00-5	≥10 - ≤25	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319	[1] [2]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥10 - ≤25	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Asp. Tox. 1, H304	[1] [2]
Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol	CAS: 445498-00-0	≥5.0 - ≤9.4	Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
2-methylpropan-1-ol	REACH #: 01-2119484609-23 EC: 201-148-0 CAS: 78-83-1 Index: 603-108-00-1	≥5.0 - ≤10	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	[1] [2]
2,4,6-tris(dimethylaminomethyl)phenol	REACH #: 01-2119560597-27 EC: 202-013-9 CAS: 90-72-2 Index: 603-069-00-0	≥1.0 - ≤6.4	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317	[1]
N-(3-(trimethoxysilyl)propyl)ethylenediamine	EC: 217-164-6 CAS: 1760-24-3	≥1.0 - ≤5.0	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412	[1]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≥1.0 - ≤5.0	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
m-phenylenebis(methylamine)	REACH #: 01-2119480150-50 EC: 216-032-5 CAS: 1477-55-0	≥1.0 - ≤3.3	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 EUH071	[1] [2]
4,4'-isopropylidenediphenol	REACH #: 01-2119457856-23 EC: 201-245-8 CAS: 80-05-7 Index: 604-030-00-0	≥1.0 - ≤5.0	Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 1B, H360F STOT SE 3, H335 Aquatic Chronic 2, H411	[1] [2] [5]
salicylic acid	REACH #: 01-2119486984-17 EC: 200-712-3 CAS: 69-72-7 Index: 607-732-00-5	≤1.2	Acute Tox. 4, H302 Eye Dam. 1, H318 Repr. 2, H361d	[1]
3-aminopropyldimethylamine	REACH #: 01-2119486842-27 EC: 203-680-9 CAS: 109-55-7	≤0.30	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 4, H312	[1]

**SECTION 3: Composition/information on ingredients**

	Index: 612-061-00-6		Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317	
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**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
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

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** : 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** : May cause respiratory irritation.
- Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

**SECTION 4: First aid measures**

- Skin contact** : Adverse symptoms may include the following:  
 pain or irritation  
 redness  
 dryness  
 cracking  
 blistering may occur  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 stomach pains  
 nausea or vomiting  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations

**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 dry chemical, CO<sub>2</sub>, 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  
 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. 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. 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. 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 swallow. 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.
- 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.

**SECTION 7: Handling and storage****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.

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

**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
benzyl alcohol	<b>IPEL (-).</b> TWA: 5 ppm STEL: 10 ppm
xylene	<b>EU OEL (Europe, 10/2019). Absorbed through skin.</b> STEL: 442 mg/m <sup>3</sup> 15 minutes. STEL: 100 ppm 15 minutes. TWA: 221 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.
2-methylpropan-1-ol	<b>ACGIH TLV (United States, 3/2020).</b> TWA: 152 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.
ethylbenzene	<b>EU OEL (Europe, 10/2019). Absorbed through skin.</b> STEL: 884 mg/m <sup>3</sup> 15 minutes. STEL: 200 ppm 15 minutes. TWA: 442 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
m-phenylenebis(methylamine)	<b>ACGIH TLV (United States, 3/2020). Absorbed through skin.</b> C: 0.018 ppm
4,4'-isopropylidenediphenol	<b>EU OEL (Europe, 10/2019).</b> TWA: 2 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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

**SECTION 8: Exposure controls/personal protection**

methods for the determination of hazardous substances will also be required.

**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. 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 and face shield.

**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. 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.

**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** : Clear.
- Odour** : Amine-like. [Strong]
- Odour threshold** : Not available.
- pH** : insoluble in water.
- Melting point/freezing point** : May start to solidify at the following temperature: 14°C (57.2°F) This is based on data for the following ingredient: m-phenylenebis(methylamine). Weighted average: -52.61°C (-62.7°F)
- Initial boiling point and boiling range** : >37.78°C
- Flash point** : losed cup: 28°C
- Evaporation rate** : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.42 compared with butyl acetate
- Flammability (solid, gas)** : liquid
- Upper/lower flammability or explosive limits** : Greatest known range: Lower: 1.3% Upper: 13% (benzyl alcohol)
- Vapour pressure** :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
2-methylpropan-1-ol	<12	<1.6	DIN EN 13016-2			

- Vapour density** : Highest known value: 3.7 (Air = 1) (benzyl alcohol). Weighted average: 3.55 (Air = 1)
- Relative density** : 1
- Solubility(ies)** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/ water** : Not applicable.

**Auto-ignition temperature**

Ingredient name	°C	°F	Method
2,4,6-tris(dimethylaminomethyl)phenol	382	719.6	EU A.15

- Decomposition temperature** : Stable under recommended storage and handling conditions (see Section 7).
- Viscosity** : Kinematic (40°C): <14 mm<sup>2</sup>/s
- Explosive properties** : Product does not present an explosion hazard.
- Oxidising properties** : Product does not present an oxidizing hazard.

**9.2 Other information**

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 nitrogen oxides Formaldehyde. metal oxide/oxides

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1.23 g/kg	-
xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
2-methylpropan-1-ol	LC50 Inhalation Vapour	Rat	24.6 mg/l	4 hours
	LD50 Dermal	Rabbit	2460 mg/kg	-
	LD50 Oral	Rat	2830 mg/kg	-
2,4,6-tris(dimethylaminomethyl)phenol	LD50 Dermal	Rabbit	1.28 g/kg	-
	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-
N-(3-(trimethoxysilyl)propyl) ethylenediamine	LD50 Oral	Rat	2413 mg/kg	-
	LD50 Oral	Rat	2413 mg/kg	-
ethylbenzene	LC50 Inhalation Vapour	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
m-phenylenebis(methylamine)	LC50 Inhalation Gas.	Rat	700 ppm	1 hours
	LD50 Dermal	Rat - Male, Female	>3100 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
bisphenol A	LD50 Dermal	Rabbit	3600 mg/kg	-
	LD50 Oral	Rat	3.25 g/kg	-
salicylic acid	LD50 Oral	Rat	0.891 g/kg	-
3-aminopropyldimethylamine	LD50 Dermal	Rabbit	>1000 mg/kg	-
	LD50 Oral	Rat	410 mg/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

**Acute toxicity estimates**

**SECTION 11: Toxicological information**

Route	ATE value
Oral	2289.62 mg/kg
Dermal	6721.94 mg/kg
Inhalation (gases)	155172.41 ppm
Inhalation (vapours)	46.47 mg/l
Inhalation (dusts and mists)	6.76 mg/l

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
2,4,6-tris(dimethylaminomethyl)phenol	Skin - Visible necrosis	Rabbit	-	4 hours	7 days
m-phenylenebis(methylamine)	Skin - Severe irritant	Rat	-	4 hours	4 hours

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitisation**

Product/ingredient name	Route of exposure	Species	Result
2,4,6-tris(dimethylaminomethyl)phenol	skin	Guinea pig	Sensitising
m-phenylenebis(methylamine)	skin	Mouse	Sensitising

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Reproductive toxicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Teratogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
xylene	Category 3	-	Respiratory tract irritation
2-methylpropan-1-ol	Category 3	-	Respiratory tract irritation
	Category 3	-	Narcotic effects
4,4'-isopropylidenediphenol	Category 3	-	Respiratory tract irritation

**Specific target organ toxicity (repeated exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs

**Aspiration hazard**

Product/ingredient name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

**SECTION 11: Toxicological information**

**Information on likely routes of exposure** : Not available.

**Potential acute health effects**

**Inhalation** : May cause respiratory irritation.

**Ingestion** : May be fatal if swallowed and enters airways.

**Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.

**Eye contact** : Causes serious eye damage.

**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:  
stomach pains  
nausea or vomiting  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

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

**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** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

Not available.

**Conclusion/Summary** : Not available.

**General** : 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** : No known significant effects or critical hazards.

**Reproductive toxicity** : May damage fertility.

**Other information** : Not available.

## SECTION 11: Toxicological 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. 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. Avoid contact with skin and clothing.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
2-methylpropan-1-ol 2,4,6-tris(dimethylaminomethyl)phenol ethylbenzene	Acute EC50 1100 mg/l	Daphnia	48 hours
	Acute LC50 175 mg/l	Fish	96 hours
	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Chronic NOEC 1 mg/l Fresh water	Daphnia - Ceriodaphnia dubia	-
bisphenol A	Acute EC50 1.32 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute LC50 3.881 mg/l Marine water	Crustaceans - Acartia tonsa - Copepodid	48 hours
	Chronic EC10 1189 µg/l	Algae - Pseudokirchneriella subcapitata	72 hours
salicylic acid	Chronic NOEC 0.86 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Acute EC50 1147.57 mg/l Fresh water	Daphnia - Daphnia longispina - Neonate	48 hours
	Chronic NOEC 5.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
3-aminopropyl dimethylamine	Acute LC50 122 mg/l	Fish	96 hours

**Conclusion/Summary** : There are no data available on the mixture itself.

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
ethylbenzene	-	79 % - Readily - 10 days	-	-
3-aminopropyl dimethylamine	OECD 301D	69 % - Readily - 20 days	-	-

**Conclusion/Summary** : There are no data available on the mixture itself.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily
xylene	-	-	Readily
ethylbenzene	-	-	Readily
3-aminopropyl dimethylamine	-	-	Readily

### 12.3 Bioaccumulative potential

**SECTION 12: Ecological information**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
benzyl alcohol	0.87	-	low
xylene	3.12	7.4 to 18.5	low
2-methylpropan-1-ol	1	-	low
2,4,6-tris(dimethylaminomethyl)phenol	0.219	-	low
ethylbenzene	3.6	79.43	low
m-phenylenebis(methylamine)	0.18	2.69	low
4,4'-isopropylidenediphenol	3.4	43.65	low
salicylic acid	2.21 to 2.26	-	low
3-aminopropyldimethylamine	-0.352	-	low

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**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 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** : Yes.

**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	IMDG	IATA
<b>14.1 UN number</b>	UN3469	UN3469	UN3469
<b>14.2 UN proper shipping name</b>	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE
<b>14.3 Transport hazard class(es)</b>	3 (8)	3 (8)	3 (8)
<b>14.4 Packing group</b>	III	III	III
<b>14.5 Environmental hazards</b>	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
<b>Marine pollutant substances</b>	Not applicable.	(Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol, bisphenol A)	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)

**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 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**

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Toxic to reproduction Substance of equivalent concern for human health	4,4'-isopropylidenediphenol; bisphenol A; BPA	Recommended	ED/01/2018	10/1/2019
	4,4'-isopropylidenediphenol; bisphenol A; BPA	Recommended	ED/01/2018	10/1/2019
Substance of equivalent concern for environment	4,4'-isopropylidenediphenol; bisphenol A; BPA	Recommended	ED/01/2018	10/1/2019

**SECTION 15: Regulatory information**

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

**Other national and international regulations.****Ozone depleting substances (1005/2009/EU)**

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

**Full text of abbreviated H statements**

: H225 Highly flammable liquid and vapour.  
 H226 Flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful 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.  
 H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.  
 H336 May cause drowsiness or dizziness.  
 H360F May damage fertility.  
 H361d Suspected of damaging the unborn child.  
 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.  
 H412 Harmful to aquatic life with long lasting effects.  
 EUH071 Corrosive to the respiratory tract.

**Full text of classifications [CLP/GHS]**

: 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
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Corr. 1C	SKIN CORROSION/IRRITATION - Category 1C
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2



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SIGMATHERM 230 HARDENER

**SECTION 16: Other information**

Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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