

# SAFETY DATA SHEET



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Version 3.03

## Section 1. Chemical identification and supplier information

**Product code** : 00429451  
**Product name** : SIGMATHERM 230 HARDENER  
**CAS number** : Mixture  
**EC number** : Mixture.  
**Product type** : Liquid.

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

**Product use** : Coating.  
Professional applications, Used by spraying.  
**Uses advised against** : Product is not intended, labelled or packaged for consumer use.

**Supplier's details** : PPG Yungchi Coatings Co. Ltd  
No. 176, Road 6, Ho Nai IZ, Phuoc Tan Ward,  
Dong Nai Province,  
Vietnam  
Tel : +84 61 3936121/22

**Emergency telephone number (with hours of operation)** : CHEMTREC +(84)-444581938 (CCN 17704)

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (oral) - Category 4  
ACUTE TOXICITY (dermal) - Category 5  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN CORROSION - Category 1B  
SERIOUS EYE DAMAGE - Category 1  
SKIN SENSITIZATION - Category 1  
TOXIC TO REPRODUCTION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
AQUATIC TOXICITY (ACUTE) - Category 2  
AQUATIC TOXICITY (CHRONIC) - Category 2  
Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 1.1%  
Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 25.9%  
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 38.3%  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 23.3%

### GHS label elements

## Section 2. Hazards identification

**Hazard pictograms**

:

**Signal word**

: Danger

**Hazard statements**

: Flammable liquid and vapor.  
Harmful if swallowed or if inhaled.  
May be harmful in contact with skin.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
May damage fertility or the unborn child.  
Toxic to aquatic life with long lasting effects.

**Precautionary statements****Prevention**

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

**Response**

: Collect spillage. IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

**Storage**

: Store locked up. 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.

**Routes of entry**

: Not available.

**Other hazards which do not result in classification**

: Prolonged or repeated contact may dry skin and cause irritation. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C ( 140F).

## Section 3. Composition/information on ingredients

**Substance/mixture**

: Mixture

**CAS number/other identifiers****CAS number**

: Mixture

**EC number**

: Mixture.

## Section 3. Composition/information on ingredients

Ingredient name	CAS number	Chemical formula	%
benzyl alcohol	100-51-6	C7H8O	≥10 - ≤24
xylene	1330-20-7	C8-H10	≥10 - ≤19
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	(C6-H6-O. C3-H5-Cl-O.C- H2-O)x	≥10 - ≤25
m-phenylenebis(methylamine)	1477-55-0	C8H12N2	≤12
Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol	445498-00-0	(C6H6O.C5H14N2. CH2O)x	≤8.8
2-methylpropan-1-ol	78-83-1	C4H10O	≤7.3
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	C15H27N3O	≤5
N-(3-(trimethoxysilyl)propyl)ethylenediamine	1760-24-3	C8-H22-N2-O3-Si	≤4.4
ethylbenzene	100-41-4	C8H10	≤5
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	68609-97-2	C4-H10-O.x (C3-H6-O. C2-H4-O)x.xl2	≤2.3
bisphenol A	80-05-7	C15-H16-O2	≤1.6
salicylic acid	69-72-7	C7H6O3	<3
bis[(dimethylamino)methyl]phenol	71074-89-0	C12H20N2O	≤3
3-aminopropyldimethylamine	109-55-7	C5-H14-N2	≤0.3
toluene	108-88-3	C7H8	≤0.3

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SUB codes represent substances without registered CAS Numbers.

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

## Section 4. First aid measures

### Description of necessary 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 recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation.
- Skin contact** : Causes severe burns. May be harmful in contact with skin. Defatting to the 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

## Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- 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.
- 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.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 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.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. 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 thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
nitrogen oxides  
halogenated compounds  
metal oxide/oxides  
Formaldehyde.

## Section 5. Fire-fighting measures

**Special protective actions 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.

## Section 6. Accidental release measures

### 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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized 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".

**Environmental precautions** : Avoid dispersal of spilled 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.

### Methods and materials 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 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### 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 vapor 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

## Section 7. Handling and storage

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.

### 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 oxidizing 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
xylene	<b>Ministry of Health (Viet Nam, 6/2019)</b> <b>[xylene]</b> TWA 8 hours: 100 mg/m <sup>3</sup> . STEL 15 minutes: 300 mg/m <sup>3</sup> .
m-phenylenebis(methylamine)	<b>ACGIH TLV (United States, 1/2025)</b> Absorbed through skin. C: 0.018 ppm.
2-methylpropan-1-ol	<b>Ministry of Health (Viet Nam, 6/2019)</b> <b>[butanols]</b> TWA 8 hours: 150 mg/m <sup>3</sup> . STEL 15 minutes: 250 mg/m <sup>3</sup> .
ethylbenzene	<b>ACGIH TLV (United States, 1/2025)</b> Ototoxicant. TWA 8 hours: 20 ppm.
toluene	<b>Ministry of Health (Viet Nam, 6/2019)</b> TWA 8 hours: 100 mg/m <sup>3</sup> . STEL 15 minutes: 300 mg/m <sup>3</sup> .

### Recommended monitoring procedures

: Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 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, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

## Section 8. Exposure controls/personal protection

**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.

### 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.

**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.

**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.

## Section 9. Physical and chemical properties

### Appearance

**Physical state** : Liquid.

**Color** : Not available.

**Odor** : Characteristic.

**Odor threshold** : Not available.

**pH** : Not applicable.

**Melting point** : Not available.

**Boiling point** : >37.78°C (>100°F)

**Flash point** : Closed cup: 37°C (98.6°F)

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Not available.

## Section 9. Physical and chemical properties

**Lower and upper explosive (flammable) limits** : Not available.

**Vapor pressure** : Not available.

**Vapor density** : Not available.

**Relative density** : 1

Media	Result
cold water	Not soluble

**Partition coefficient: n-octanol/water** : Not applicable.

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

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

## Section 10. Stability and reactivity

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

**Chemical stability** : The product is stable.

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

**Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products.

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

**Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds Formaldehyde. metal oxide/oxides

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
xylene	LD50 Oral	Rat	1200 mg/kg	-
	LD50 Dermal	Rabbit	1.7 g/kg	-
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	LD50 Oral	Rat	4.3 g/kg	-
	LD50 Oral	Rat	>10000 mg/kg	-
m-phenylenebis (methylamine)	LC50 Inhalation Gas.	Rat	700 ppm	1 hours

## Section 11. Toxicological information

2-methylpropan-1-ol	LD50 Dermal	Rat - Male, Female	>3100 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapor	Rat	24.6 mg/l	4 hours
2,4,6-tris (dimethylaminomethyl) phenol	LD50 Dermal	Rabbit	2460 mg/kg	-
	LD50 Oral	Rat	2830 mg/kg	-
	LD50 Dermal	Rat	1280 mg/kg	-
N-(3-(trimethoxysilyl)propyl) ethylenediamine	LD50 Oral	Rat	1200 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	-
ethylbenzene	LD50 Oral	Rat	2413 mg/kg	-
	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
oxirane, mono[ (C12-14-alkyloxy)methyl] derivs.	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	>4000 mg/kg	-
	LD50 Oral	Rat	17100 mg/kg	-
bisphenol A	LD50 Dermal	Rabbit	3600 mg/kg	-
	LD50 Oral	Rat	3.25 g/kg	-
	LD50 Oral	Rat	0.891 g/kg	-
salicylic acid	LD50 Oral	Rat	>21.9 mg/l	4 hours
	LC50 Inhalation Dusts and mists	Rat	2139 mg/kg	-
	LD50 Dermal	Rabbit	400 to 2000 mg/ kg	-
3-aminopropyldimethylamine	LD50 Dermal	Rat	410 mg/kg	-
	LD50 Dermal	Rat	49 g/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	5580 mg/kg	-

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

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
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.

### Sensitization

Product/ingredient name	Route of exposure	Species	Result
m-phenylenebis (methylamine)	skin	Mouse	Sensitizing

**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

## Section 11. Toxicological information

**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)

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
N-(3-(trimethoxysilyl)propyl)ethylenediamine	Category 3	-	Respiratory tract irritation
bisphenol A	Category 3	-	Respiratory tract irritation
3-aminopropyldimethylamine	Category 3	-	Respiratory tract irritation
toluene	Category 3	-	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs
toluene	Category 2	inhalation	-

### Aspiration hazard

Name	Result
benzyl alcohol	ASPIRATION HAZARD - Category 2
xylene	ASPIRATION HAZARD - Category 1
2-methylpropan-1-ol	ASPIRATION HAZARD - Category 2
ethylbenzene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1

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

### Potential acute health effects

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

**Inhalation** : Harmful if inhaled. May cause respiratory irritation.

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

**Ingestion** : Harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

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

## Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

#### Long term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

#### Potential chronic health effects

- 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 or the unborn child.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	1607.83 mg/kg
Dermal	2235.37 mg/kg
Inhalation (gases)	15946.93 ppm
Inhalation (vapors)	34.82 mg/l
Inhalation (dusts and mists)	4.47 mg/l

**Other information** :

## 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 vapor/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. 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.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Acute LC50 2.54 mg/l	Fish	96 hours
	Acute EC50 1100 mg/l	Daphnia	48 hours
2-methylpropan-1-ol	Acute LC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
2,4,6-tris (dimethylaminomethyl)phenol	Acute LC50 >100 mg/l	Fish	96 hours
	EC50 597 mg/l	Fish	96 hours
N-(3-(trimethoxysilyl)propyl) ethylenediamine	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Chronic NOEC 1 mg/l Fresh water	Daphnia - <i>Ceriodaphnia dubia</i>	-
ethylbenzene	EC50 844 mg/l	Algae	72 hours
	EC50 7.2 mg/l	Daphnia	48 hours
oxirane, mono[ (C12-14-alkyloxy)methyl] derivs.	LC50 >1.8 mg/l	Fish	96 hours
	Acute EC50 1.32 mg/l	Algae - <i>Raphidocelis subcapitata</i>	72 hours
bisphenol A	Acute LC50 0.885 mg/l Fresh water	Crustaceans	48 hours
	Acute LC50 8.11 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
salicylic acid	Acute LC50 4.6 mg/l Fresh water	Fish	96 hours
	Chronic EC10 1189 µg/l	Algae - <i>Raphidocelis subcapitata</i>	72 hours
toluene	Chronic NOEC 0.000174 mg/l Fresh water	Fish	5 months
	Acute EC50 1147.57 mg/l Fresh water	Daphnia - <i>Daphnia longispina</i> - Neonate	48 hours
	Chronic NOEC 5.6 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	21 days
	EC50 3.78 mg/l	Daphnia	48 hours
	LC50 5.5 mg/l	Fish	96 hours

### Persistence and degradability

## Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
2,4,6-tris (dimethylaminomethyl)phenol	OECD Ready Biodegradability - Closed Bottle Test	4 % - Not readily - 28 days	-	-
ethylbenzene	-	79 % - Readily - 10 days	-	-
oxirane, mono[ (C12-14-alkyloxy)methyl] derivs.	OECD Ready Biodegradability - Manometric Respirometry Test	87 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily
xylene	-	-	Readily
2,4,6-tris (dimethylaminomethyl)phenol	-	-	Not readily
ethylbenzene	-	-	Readily
oxirane, mono[ (C12-14-alkyloxy)methyl] derivs.	-	-	Readily
bisphenol A	-	-	Readily
toluene	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
benzyl alcohol	0.87	-	Low
xylene	3.12	7.4 to 18.5	Low
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	2.7	-	Low
m-phenylenebis (methylamine)	0.18	2.69	Low
2-methylpropan-1-ol	1	-	Low
2,4,6-tris (dimethylaminomethyl)phenol	0.219	-	Low
ethylbenzene	3.6	79.43	Low
oxirane, mono[ (C12-14-alkyloxy)methyl] derivs.	3.77	160 to 263	Low
bisphenol A	3.4	43.65	Low
salicylic acid	2.21 to 2.26	-	Low
3-aminopropyldimethylamine	-0.352	-	Low
toluene	2.73	90	Low

### Mobility in soil

**Soil/Water partition coefficient** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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. Vapor 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	UN	IMDG	IATA
UN number	UN3470	UN3470	UN3470
UN proper shipping name	Not determined.	PAINT, CORROSIVE, FLAMMABLE	PAINT, CORROSIVE, FLAMMABLE
Transport hazard class(es)	8 (3)	8 (3)	8 (3)
Packing group	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(Epoxy Resin)	Not applicable.

### Additional information

UN : None identified.

**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.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

**Safety, health and environmental regulations specific for the product** : - Law on Chemicals No. 69/2025/QH15  
 - Decree No. 24/2026/NĐ-CP regulating the lists of chemicals under the scope of the Law on Chemicals.  
 - Decree No. 25/2026/NĐ-CP detailing and providing measures for organizing and guiding the implementation of certain provisions of the Law on Chemicals related to the development of a safe chemical industry and chemical security.  
 - Decree No. 26/2026/NĐ-CP detailing and guiding the implementation of certain provisions of the Law on Chemicals related to the management of chemical

## Section 15. Regulatory information

activities and hazardous chemicals in products and goods.

- Circular No. 01/2026/TT-BCT detailing and guiding the implementation of certain provisions of the Law on Chemicals and Decree No. 26/2026/NĐ-CP of the Government on the management of chemical activities and hazardous chemicals in products and goods.

- Circular No. 02/2026/TT-BCT regulating several measures for implementing the Law on Chemicals and Decree No. 25/2026/NĐ-CP of the Government, which provides detailed regulations and measures for organizing and guiding the implementation of certain provisions of the Law on Chemicals related to the development of a safe chemical industry and chemical security.

### International regulations

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

## Section 16. Other information

### History

**Date of issue/Date of revision** : 31 March 2026

**Date of previous issue** : 6/25/2025

**Version** : 3.03

**Prepared by** : EHS

**Key to abbreviations** : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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 PPG, 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.