

# SAFETY DATA SHEET



SIGMALINE 403 HS HARDENER

Date of issue 16 October 2019

Version 4

## 1. Product and company identification

**Product name** : SIGMALINE 403 HS HARDENER  
**Product code** : 00332837  
**Product type** : Liquid.

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

**Product use** : Consumer applications, Professional applications, Used by spraying.  
**Use of the substance/  
mixture** : Coating.  
**Uses advised against** : Not applicable.

**Supplier's details** : PPG PMC Japan Co., Ltd.  
8F, Shintetsu Bldg., 1-1, Daikaidori 1-chome, Kobe 652-0803  
Tel : +81 78 574 2777  
Fax : +81 78 576 0035

**Emergency telephone  
number** : 078 574 2777

## 2. Hazards identification

**GHS Classification** : FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (inhalation) - Category 3  
SKIN CORROSION - Category 1C  
SERIOUS EYE DAMAGE - Category 1  
SKIN SENSITIZATION - Category 1  
GERM CELL MUTAGENICITY - Category 2  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION (Fertility) - Category 1B  
TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS), kidneys, liver, respiratory system) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bones, central nervous system (CNS), nervous system, respiratory system) - Category 2  
AQUATIC HAZARD (ACUTE) - Category 2  
AQUATIC HAZARD (LONG-TERM) - Category 3

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

## 2. Hazards identification

<b>Hazard statements</b>	: Flammable liquid and vapor. Toxic if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May damage fertility or the unborn child. Suspected of causing genetic defects. Suspected of causing cancer. May cause damage to organs. (central nervous system (CNS), kidneys, liver, respiratory system) May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. (bones, central nervous system (CNS), nervous system, respiratory system) Toxic to aquatic life. Harmful to aquatic life with long lasting effects.
<b>Precautionary statements</b>	
<b>General</b>	: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
<b>Prevention</b>	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
<b>Response</b>	: Get medical attention if you feel unwell. IF exposed or concerned: Call a POISON CENTER or physician. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical attention. 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 physician.
<b>Storage</b>	: Store locked up. Store in a well-ventilated place. Keep cool.
<b>Disposal</b>	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Other hazards which do not result in classification</b>	: Prolonged or repeated contact may dry skin and cause irritation.

## 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Mixture
<b>CAS number/other identifiers</b>	
<b>CAS number</b>	: Not applicable.
<b>ENCS number</b>	: Not available.

### 3. Composition/information on ingredients

Ingredient name	%	CAS number	ENCS
Epoxy Amine Resin	25 - <50	SUB127764	Not available.
benzyl alcohol	12.5 - <15	100-51-6	3-1011
Poly[oxy(methyl-1,2-ethanediyl)], $\alpha$ -(2-aminomethylethyl)- $\omega$ -(2-aminomethylethoxy)-	12.5 - <15	9046-10-0 (n = 2-6)	(7)-324
Ethylbenzene	7 - <10	100-41-4	3-28; 3-60
Xylene	5 - <7	1330-20-7	3-3; 3-60
Isobutyl alcohol	3 - <5	78-83-1	2-3049
Cyclohexanone	2 - <3	108-94-1	3-2376

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 and hence require reporting in this section.

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

SUB codes represent substances without registered CAS Numbers.

### 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** : Toxic if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes severe burns. May cause damage to organs following a single exposure in contact with skin. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May cause damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

## 4. First aid measures

- 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)

## 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. This material is harmful 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

**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.

## 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.

### 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.

## 7. Handling and storage

- Precautions for safe handling** : Put on appropriate personal protective equipment (see Section 8). 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. 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 ingest. Avoid breathing vapor or mist. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

## 7. Handling and storage

**Conditions for safe storage :** 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.

## 8. Exposure controls/personal protection

### Control parameters

### Occupational exposure limits

Ingredient name	Exposure limits
Ethylbenzene	<b>Japan Society for Occupational Health (Japan, 5/2017).</b> OEL-M: 217 mg/m <sup>3</sup> 8 hours. OEL-M: 50 ppm 8 hours. <b>ISHL (Japan, 4/2017).</b> TWA: 20 ppm 8 hours.
Xylene	<b>Japan Society for Occupational Health (Japan, 5/2017).</b> OEL-M: 217 mg/m <sup>3</sup> 8 hours. OEL-M: 50 ppm 8 hours. <b>ISHL (Japan, 4/2017).</b> TWA: 50 ppm 8 hours.
Isobutyl alcohol	<b>Japan Society for Occupational Health (Japan, 5/2017).</b> OEL-M: 150 mg/m <sup>3</sup> 8 hours. OEL-M: 50 ppm 8 hours. <b>ISHL (Japan, 4/2017).</b> TWA: 50 ppm 8 hours.
Cyclohexanone	<b>Japan Society for Occupational Health (Japan, 5/2017).</b> OEL-M: 100 mg/m <sup>3</sup> 8 hours. OEL-M: 25 ppm 8 hours. <b>ISHL (Japan, 4/2017).</b> TWA: 20 ppm 8 hours.

**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 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.

**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.

## 8. Exposure controls/personal protection

### 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 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.

## 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Colorless.
- Odor** : Aromatic.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 34°C (93.2°F)
- Relative density** : 1
- Solubility** : Insoluble in the following materials: cold water.
- Viscosity** : Not Applicable

## 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.

## 10. Stability and reactivity

- 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** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## 11. Toxicological information

### 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	-
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	LD50 Oral	Rat	1.23 g/kg	-
	LD50 Dermal	Rat	2980 mg/kg	-
Ethylbenzene	LD50 Oral	Rat	2885 mg/kg	-
	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
Xylene	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	>1.7 g/kg	-
Isobutyl alcohol	LD50 Oral	Rat	4.3 g/kg	-
	LC50 Inhalation Vapor	Rat	24.6 mg/l	4 hours
	LD50 Dermal	Rabbit	2460 mg/kg	-
Cyclohexanone	LD50 Oral	Rat	2830 mg/kg	-
	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	1100 mg/kg	-
	LD50 Oral	Rat	1.54 g/kg	-

#### Irritation/Corrosion

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

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

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



## 11. Toxicological information

Name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> Ethylbenzene	Category 3	Not applicable.	Narcotic effects
Xylene	Category 3	Not applicable.	Respiratory tract irritation
Isobutyl alcohol	Category 1	Not determined	central nervous system (CNS), kidneys, liver and respiratory system
Cyclohexanone	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Narcotic effects
	Category 3	Not applicable.	Respiratory tract irritation
	Category 1	Not determined	respiratory system
	Category 2	Not determined	central nervous system (CNS)
	Category 3	Not applicable.	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> Ethylbenzene	Category 2	Not determined	hearing organs
Xylene	Category 1	Not determined	nervous system and respiratory system
Cyclohexanone	Category 1	Not determined	bones and central nervous system (CNS)

### Aspiration hazard

Name	Result
<input checked="" type="checkbox"/> Ethylbenzene	ASPIRATION HAZARD - Category 1
Xylene	ASPIRATION HAZARD - Category 1

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

### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Toxic if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes severe burns. May cause damage to organs following a single exposure in contact with skin. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May cause damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression.

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

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

## 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
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** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

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

**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : Suspected of causing genetic defects.

**Teratogenicity** : May damage the unborn child.

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

**Fertility effects** : May damage fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

## 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SIGMALINE 403 HS HARDENER	2709.8	2008.3	N/A	5	N/A
benzyl alcohol	1230	2000	N/A	3	N/A
Poly[oxy(methyl-1,2-ethanediyl)], $\alpha$ -(2-aminomethylethyl)- $\omega$ -(2-aminomethylethoxy)-	2885	2980	N/A	N/A	N/A
Ethylbenzene	3500	17800	N/A	17.8	N/A
Xylene	4300	1100	N/A	11	N/A
Isobutyl alcohol	2830	2460	N/A	11	N/A
Cyclohexanone	1540	300	N/A	3	N/A

### Other information

:

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. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

## 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Poly[oxy(methyl-1,2-ethanediyl)], $\alpha$ -(2-aminomethylethyl)- $\omega$ -(2-aminomethylethoxy)-	EC50 15 mg/l	Algae	72 hours
Ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish	96 hours
Isobutyl alcohol	Acute EC50 1100 mg/l	Daphnia	48 hours

### Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily
Poly[oxy(methyl-1,2-ethanediyl)], $\alpha$ -(2-aminomethylethyl)- $\omega$ -(2-aminomethylethoxy)-	-	-	Not readily
Ethylbenzene	-	-	Readily
Xylene	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
benzyl alcohol	1.1	-	low
Ethylbenzene	3.15	79.43	low
Xylene	3.16	7.4 to 18.5	low
Isobutyl alcohol	0.76	-	low
Cyclohexanone	0.81	-	low

### Mobility in soil

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

## 12. Ecological information

**Mobility** : Not available.

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

## 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.

## 14. Transport information

	UN	IMDG	IATA
<b>UN number</b>	UN3469	UN3469	UN3469
<b>UN proper shipping name</b>	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE
<b>Transport hazard class(es)</b>	3 (8)	3 (8)	3 (8)
<b>Packing group</b>	III	III	III
<b>Environmental hazards</b>	No.	No.	No.
<b>Marine pollutant substances</b>	Not applicable.	Not applicable.	Not applicable.

### Additional information

**UN** : None identified.

**IMDG** : None identified.

**IATA** : 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.

## 15. Regulatory information

### Fire Service Law

Category	Substance name/Type	Danger category	Signal word	Designated quantity
Category IV	Class II petroleum	III	Flammable - Keep Fire Away	1000 L

### Pollutant Release and Transfer Registers (PRTR)

Ingredient name	%	Status	Reference number
Ethylbenzene	9.1885	Class 1	53
xylene	5.2816	Class 1	80

### ISHL

#### Use of specified chemical substances

Ingredient name	%	Status	Reference number
Ethyl benzene	<10	Group-2 Substances under Supervision	3-3

#### Label requirements

Ingredient name	%	Status	Reference number
Ethylbenzene	<10	Listed	70
Xylene	≤5.3	Listed	136
Butanol	≤5.0	Listed	477
Cyclohexanone	≤2.5	Listed	231

#### Chemicals requiring notification

Ingredient name	%	Status	Reference number
Ethylbenzene	<10	Listed	70
Xylene	≤5.3	Listed	136
Butanol	≤5.0	Listed	477
Cyclohexanone	≤2.5	Listed	231

#### Carcinogen

None of the components are listed.

#### Mutagen

None of the components are listed.

**Corrosive liquid** : Not listed

**Occupational Safety and Health Law** : Flammable liquid Class 4

**Prevention of Tetraalkyl Lead Poisoning** : Not listed

**Harmful Substances Subject to Obtaining Permission for Manufacturing** : Not listed

**Harmful Substances, Prohibited for Manufacturing** : Not listed

## 15. Regulatory information

**Dangerous Substances** : Inflammable

**Lead regulation** : Not listed

**Organic solvents poisoning prevention** : Class 2

### Poisonous and Deleterious Substances

None of the components are listed.

### Chemical Substances Control Law (CSCL)

Ingredient name	%	Status	Reference number
Ethylbenzene; Ethylbenzol; EB	9.1885	Priority assessment	50
Xylene	5.2816	Priority assessment	125
Cyclohexanone; Cyclohexyl ketone	2.4933	Priority assessment	131

**High Pressure Gas Control Law** : Not available.

### Explosives Control Law

None of the components are listed.

**Law Concerning Prevention of Pollution of the Ocean and Maritime Disaster** : Not available.

### Maritime Safety Law

#### Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

### Container class

None of the components are listed.

**JSOH Carcinogen** : Group 2B

**List of Specially Controlled Industrial Waste** : Not listed

**Japan inventory** : At least one component is not listed.

**Road law** : Not available.

## 16. Other information

### History

**Date of issue/Date of revision** : 16 October 2019

**Date of previous issue** : 6/16/2019

**Version** : 4

**Prepared by** : EHS

**Key to abbreviations** : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association

## 16. Other information

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)

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

UN = United Nations

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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