

SAFETY DATA SHEET

AMERCOAT 68HS RESIN



Date of issue 19 December 2024

Version 3.01

1. Product and company identification

Product name : AMERCOAT 68HS RESIN
Product code : AT68HS-A/01
Other means of identification : 00334801
Product type : Liquid.

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

Product use : Industrial 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 Japan; Tel: +81-78-574-2777
Emergency telephone number : 078 574 2777

2. Hazards identification

GHS Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
HAZARDOUS TO THE AQUATIC ENVIRONMENT - ACUTE HAZARD - Category 2
HAZARDOUS TO THE AQUATIC ENVIRONMENT - CHRONIC HAZARD - Category 2

GHS label elements

Hazard pictograms :



Signal word : Danger

2. Hazards identification

Hazard statements : Flammable liquid and vapor.
 Causes skin irritation.
 May cause an allergic skin reaction.
 Causes serious eye irritation.
 Harmful if inhaled.
 May cause respiratory irritation.
 May cause drowsiness or dizziness.
 Suspected of causing genetic defects.
 May cause cancer.
 May damage fertility or the unborn child.
 May cause damage to organs. (blood system, central nervous system (CNS), kidneys, liver, respiratory organs)
 Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS), immune system, kidneys, nervous system, respiratory organs)
 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. Do not breathe 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: Call a POISON CENTER or doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

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.

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

3. Composition/information on ingredients

Substance/mixture : Mixture

CAS number/other identifiers

CAS number : Not applicable.

CSCL number : Not available.

Ingredient name	%	CAS number	CSCL
Crystalline silica (quartz)	20 - <25	14808-60-7	1-548
bis-[4-(2,3-epoxipropoxy)phenyl]propane	15 - <20	1675-54-3	4-209; 7-1279; 7-1283
Epoxy Resin (700<MW<=1100)	10 - <12.5	25036-25-3	Not available.
methyl isobutyl ketone	10 - <12.5	108-10-1	2-542
Methyl n-pentyl ketone	10 - <12.5	110-43-0	2-542
Xylene	3 - <5	1330-20-7	3-3; 3-60
Solvent naphtha (petroleum), light aromatic	3 - <5	64742-95-6	Not available.
Cashew, nutshell liq., oligomeric reaction products	3 - <5	68413-24-1	Not available.

3. Composition/information on ingredients

with 1-chloro-2,3-epoxypropane			
Tetraethoxysilane	2 - <3	78-10-4	2-2048
1,2,4-Trimethylbenzene	1 - <2	95-63-6	3-3427; 3-7
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	1 - <2	2530-83-8	2-2071
Ethyl Benzene	0.5 - <1	100-41-4	3-28; 3-60
1-Butanol	0.2 - <0.5	71-36-3	2-3049
Silica	0.2 - <0.5	7631-86-9	1-548

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** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use 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 irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May cause damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

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

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- 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, CO₂, 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
halogenated compounds
metal oxide/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. Avoid breathing 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.

7. Handling and storage

Precautions for safe handling : 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 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.

7. Handling and storage

Conditions for safe storage : Do not store above the following temperature: 50°C (122°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
crystalline silica, respirable powder (<10 microns)	Japan Society for Occupational Health (Japan, 5/2023) [Respirable crystalline silica] OEL-C: 0.03 mg/m ³ . Form: Respirable dust.
4-methylpentan-2-one	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 50 ppm. OEL-M 8 hours: 205 mg/m ³ . Industrial Safety and Health Act (Japan, 6/2020) TWA 8 hours: 20 ppm.
xylene	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 50 ppm. OEL-M 8 hours: 217 mg/m ³ . Industrial Safety and Health Act (Japan, 6/2020) [xylene] TWA 8 hours: 50 ppm.
tetraethyl silicate	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 10 ppm. OEL-M 8 hours: 85 mg/m ³ .
1,2,4-trimethylbenzene	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 25 ppm. OEL-M 8 hours: 120 mg/m ³ .
ethylbenzene	Japan Society for Occupational Health (Japan, 5/2023) Absorbed through skin. OEL-M 8 hours: 20 ppm. OEL-M 8 hours: 87 mg/m ³ . Industrial Safety and Health Act (Japan, 6/2020) TWA 8 hours: 20 ppm.
butan-1-ol	Japan Society for Occupational Health (Japan, 5/2023) Absorbed through skin. OEL-C: 50 ppm. OEL-C: 150 mg/m ³ . Industrial Safety and Health Act (Japan, 6/2020) TWA 8 hours: 25 ppm.

8. Exposure controls/personal protection

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.

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 protection : Chemical splash goggles.

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 : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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	: White to yellowish.
Odor	: Characteristic.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 27.78°C (82°F)
Evaporation rate	: 0.81 (butyl acetate = 1)
Vapor pressure	: 1.1 kPa (8.6 mm Hg)
Relative density	: 1.21
Bulk Density (g/cm ³)	: 3.389

Solubility(ies)

Media	Result
cold water	Not soluble

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 halogenated compounds metal oxide/oxides

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
bis-[4-(2,3-epoxipropoxy)phenyl]propane	LD50 Dermal	Rabbit	23000 mg/kg	-
	LD50 Oral	Rat	15000 mg/kg	-
Epoxy Resin (700<MW<=1100)	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
methyl isobutyl ketone	LC50 Inhalation Vapor	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	2.08 g/kg	-
Methyl n-pentyl ketone	LC50 Inhalation Vapor	Rat	16.7 mg/l	4 hours
	LD50 Dermal	Rabbit	10.206 g/kg	-
	LD50 Oral	Rat	1.6 g/kg	-
Xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-

11. Toxicological information

Solvent naphtha (petroleum), light aromatic	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
Cashew, nutshell liq., oligomeric reaction products with 1-chloro-2,3-epoxypropane	LD50 Dermal	Rabbit	>2 g/kg	-
	LD50 Oral	Rat	5 g/kg	-
Tetraethoxysilane	LC50 Inhalation Dusts and mists	Rat	10 to 16 mg/l	4 hours
	LD50 Dermal	Rabbit	5.878 g/kg	-
1,2,4-Trimethylbenzene	LD50 Oral	Rat	6270 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	LD50 Oral	Rat	5 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5.3 mg/l	4 hours
Ethyl Benzene	LD50 Oral	Rat	7.01 g/kg	-
	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
1-Butanol	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
Silica	LC50 Inhalation Vapor	Rat	24000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Eyes - Mild irritant	Rabbit	-	24 hours	-
	Eyes - Redness of the conjunctivae	Rabbit	0.4	24 hours	-
	Skin - Edema	Rabbit	0.5	4 hours	-
	Skin - Erythema/Eschar	Rabbit	0.8	4 hours	-
	Skin - Mild irritant	Rabbit	-	4 hours	-
Xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
bis-[4-(2,3-epoxipropoxy)phenyl]propane	skin	Mouse	Sensitizing

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
methyl isobutyl ketone	Category 3	-	Respiratory tract irritation
Methyl n-pentyl ketone	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
Xylene	Category 3 Category 1	-	Narcotic effects central nervous system (CNS), kidneys, liver, respiratory organs
Solvent naphtha (petroleum), light aromatic	Category 3	-	Narcotic effects
Tetraethoxysilane	Category 3 Category 1 Category 3	- -	Narcotic effects blood system Respiratory tract irritation
1,2,4-Trimethylbenzene	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
Ethyl Benzene	Category 3	-	Respiratory tract irritation
1-Butanol	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
Silica	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Crystalline silica (quartz)	Category 1	-	immune system, kidneys, respiratory organs
methyl isobutyl ketone	Category 1	-	central nervous system (CNS)
Xylene	Category 1	-	nervous system, respiratory organs
Tetraethoxysilane	Category 1	-	respiratory organs
1,2,4-Trimethylbenzene	Category 2 Category 1	-	kidneys central nervous system (CNS), respiratory organs
Ethyl Benzene	Category 1	-	hearing organs, nervous system
1-Butanol	Category 1	-	central nervous system (CNS), hearing organs
Silica	Category 1	-	immune system, kidneys, respiratory organs

Aspiration hazard

11. Toxicological information

Name	Result
Xylene	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1
1,2,4-Trimethylbenzene	ASPIRATION HAZARD - Category 1
Ethyl Benzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May cause damage to organs following a single exposure if swallowed. 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 or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
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:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
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

11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Causes 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 : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : Suspected of causing genetic defects.

Reproductive toxicity : May damage fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AMERCOAT 68HS RESIN	6016.6	7173.4	N/A	17.6	N/A
bis-[4-(2,3-epoxipropoxy)phenyl]propane	15000	23000	N/A	N/A	N/A
Epoxy Resin (700<MW<=1100)	2500	2500	N/A	N/A	N/A
methyl isobutyl ketone	2080	N/A	N/A	3	N/A
Methyl n-pentyl ketone	1600	10206	N/A	16.7	N/A
Xylene	4300	1700	N/A	11	N/A
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
Cashew, nutshell liq., oligomeric reaction products with 1-chloro-2,3-epoxypropane	5000	2500	N/A	N/A	N/A
Tetraethoxysilane	6270	5878	N/A	N/A	N/A
1,2,4-Trimethylbenzene	5000	N/A	N/A	18	N/A
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	7010	N/A	N/A	N/A	N/A
Ethyl Benzene	3500	17800	N/A	17.8	N/A
1-Butanol	N/A	3400	N/A	24	N/A

Other information :

Prolonged or repeated contact may dry skin and cause irritation. Sanding and grinding dusts may be harmful if inhaled. 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. Avoid contact with skin and clothing.

12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Acute LC50 1.8 mg/l Fresh water	Daphnia - <i>daphnia magna</i>	48 hours
methyl isobutyl ketone	Chronic NOEC 0.3 mg/l	Daphnia	21 days
Methyl n-pentyl ketone	Acute LC50 >179 mg/l	Fish	96 hours
Solvent naphtha (petroleum), light aromatic	Acute LC50 131 mg/l	Fish	96 hours
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	Acute LC50 8.2 mg/l	Fish	96 hours
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	Acute EC50 255 mg/l Fresh water	Algae	72 hours

12. Ecological information

Ethyl Benzene	Acute EC50 473 mg/l Acute LC50 55 mg/l	Daphnia Fish	48 hours 96 hours
1-Butanol	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
Silica	Chronic NOEC 1 mg/l Fresh water Acute LC50 1376 mg/l Acute EC50 2.2 g/L Fresh water	Daphnia - <i>Ceriodaphnia dubia</i> Fish Daphnia - <i>Daphnia magna</i> - Neonate	- 96 hours 48 hours
	Acute LC50 >10000 mg/l Chronic NOEC 12.5 mg/l Fresh water	Fish Daphnia - <i>Daphnia magna</i> - Neonate	96 hours 21 days

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
methyl isobutyl ketone	OECD 301F	83 % - Readily - 28 days	-	-
Methyl n-pentyl ketone	OECD 310	69 % - Readily - 28 days	-	-
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	-	37 % - Not readily - 28 days	-	-
Ethyl Benzene	-	79 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxypropoxy)phenyl]propane	-	-	Not readily
methyl isobutyl ketone	-	-	Readily
Methyl n-pentyl ketone	-	-	Readily
Xylene	-	-	Readily
2-[[3-(Trimethoxysilyl)propoxy]methyl]oxirane	-	-	Not readily
Ethyl Benzene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
methyl isobutyl ketone	1.9	-	Low
Methyl n-pentyl ketone	2.26	-	Low
Xylene	3.12	7.4 to 18.5	Low
Tetraethoxysilane	3.18	-	Low
1,2,4-Trimethylbenzene	3.63	120.23	Low
Ethyl Benzene	3.6	79.43	Low
1-Butanol	1	-	Low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	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.

Transport in bulk according to IMO instruments : Not applicable.

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)

15. Regulatory information

Ingredient name	%	Status	Reference number
Methyl isobutyl ketone	10	Class 1	737
Xylene	4.4	Class 1	80
Trimethylbenzene	2.4	Class 1	691
Trimethoxy-[3-(oxiran-2-ylmethoxy)propyl]silane	1.5	Class 1	693

Industrial Safety and Health Act

Ordinance on the Prevention of the Hazard due to Specified Chemical Substances

Ingredient name	%	Status	Reference number
methyl isobutyl ketone	≥10 - ≤20	Special Organic Solvents	33-2

Substance(s) requiring labelling

Ingredient name	%	Status	Reference number
Crystalline silica	≥20 - ≤30	Listed	165-2
Methyl isobutyl ketone	≥10 - ≤20	Listed	569
Methyl n-pentyl ketone	≥10 - ≤20	Listed	586
Xylene	≤10	Listed	136
Petroleum naphtha	≤10	Listed	330
Trimethylbenzene	≤10	Listed	404
Tetraethoxysilane	≤10	Listed	356
Ethylbenzene	≤10	Listed	70

Chemicals requiring notification

Ingredient name	%	Status	Reference number
Crystalline silica	≥20 - ≤30	Listed	165-2
Methyl isobutyl ketone	≥10 - ≤20	Listed	569
Methyl n-pentyl ketone	≥10 - ≤20	Listed	586
Xylene	≤10	Listed	136
Petroleum naphtha	≤10	Listed	330
Trimethylbenzene	≤10	Listed	404
Tetraethoxysilane	≤10	Listed	356
Ethylbenzene	≤10	Listed	70
Butanol	≤10	Listed	477

Carcinogens based on Article 577-2 of the Ordinance on ISH

Ingredient name	%	Status	Reference number
quartz	≥20 - ≤30	Listed	-
silicon dioxide	≤10	Listed	-

Mutagen

None of the components are listed.

Corrosive liquid : Not listed

Occupational Safety and Health Law : Inflammable, Combustible

Regulations on the Prevention of Tetraalkyl Lead Poisoning : Not listed

15. Regulatory information

Harmful Substances : Not listed

**Subject to Obtaining
Permission for
Manufacturing**

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

**ISHL Enforcement Order
Appendix 1 - Dangerous
Substances** : Inflammable, Combustible

Lead regulation : Not listed

**Organic solvents
poisoning prevention** : Not applicable.

Poisonous and Deleterious Substances

None of the components are listed.

Chemical Substances Control Law (CSCL)

Ingredient name	%	Status	Reference number
Polycondensate of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid only)	≥10 - ≤20	Priority assessment	87
Methyl isobutyl ketone	≥10 - ≤20	Priority assessment	116
Xylene	≤10	Priority assessment	125
1,2,4-Trimethylbenzene	≤10	Priority assessment	49
Ethylbenzene	≤10	Priority assessment	50
1-Butanol	≤10	Priority assessment	124
1,3,5-Trimethylbenzene	≤10	Priority assessment	201
Cumene	≤10	Priority assessment	126
Toluene	≤10	Priority assessment	46
Formaldehyde	≤10	Priority assessment	25
Benzene	≤10	Priority assessment	45
Naphthalene	≤10	Priority assessment	76
Epichlorohydrin	≤10	Priority assessment	22

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

Explosives Control Law

None of the components are listed.

**Law concerning prevention
of pollution of the ocean** : 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 1

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

15. Regulatory information

Japan inventory : All components are listed or exempted.

Road law : Not available.

16. Other information

History

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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
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.

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