

Date of issue 1/15/2020 (month/day/year)

Version 6.01

Section 1. Chemical product and company identification

- A. Product name** : SIGMASHIELD 905 BASE RAL 1023
Product code : 00343826
- B. Relevant identified uses of the substance or mixture and uses advised against**
- Product use** : Professional applications, Used by spraying.
Use of the substance/ mixture : Coating. Paint. Painting-related materials.
Uses advised against : Product is not intended, labelled or packaged for consumer use.
- C. Supplier's information** : PPG SSC
(680-090)
19, Yeocheon-ro 217beon-gil, Nam-gu,
Ulsan, Korea
Tel: +82-52-210-8222
- Email Address** : Korea.MSDS@PPG.COM
- Emergency telephone number:** : +82-52-210-8222

Section 2. Hazards identification

- A. Hazard classification** : ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS), kidneys, liver) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2

This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.

B. GHS label elements, including precautionary statements

Symbol :



Signal word :

Warning

Section 2. Hazards identification

- Hazard statements** : H332 - Harmful if inhaled.
 H319 - Causes serious eye irritation.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H351 - Suspected of causing cancer.
 H373 - May cause damage to organs through prolonged or repeated exposure.
 (central nervous system (CNS), kidneys, liver)
 H411 - Toxic to aquatic life with long lasting effects.
- Precautionary statements**
- Prevention** : P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
 P271 - Use only outdoors or in a well-ventilated area.
 P273 - Avoid release to the environment.
 P260 - Do not breathe vapor.
 P264 - Wash hands thoroughly after handling.
 P272 - Contaminated work clothing should not be allowed out of the workplace.
- Response** : P391 - Collect spillage.
 P314 - Get medical attention if you feel unwell.
 P308 + P313 - IF exposed or concerned: Get medical attention.
 P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
 P302 + P352 + P362 + P364 - IF ON SKIN: Wash with plenty of soap and water.
 Take off contaminated clothing and wash it before reuse.
 P333 + P313 - If skin irritation or rash occurs: Get medical attention.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.
- Storage** : P405 - Store locked up.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

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

Section 3. Composition/information on ingredients

CAS number/other identifiers

- CAS number** : Not applicable.

Chemical name	Common name	Identifiers	%
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	EPOXY RESIN	CAS: 25068-38-6	40 - <50
Talc, not containing asbestiform fibres	Talc, non-asbestos form	CAS: 14807-96-6	5 - <10
1,6-bis(2,3-epoxypropoxy)hexane	1,6-HEXANDIOLGLYCIDETHER	CAS: 16096-31-4	5 - <10
benzyl alcohol	BENZYL ALCOHOL	CAS: 100-51-6	5 - <10
glass, oxide, chemicals	GLASS OXIDES	CAS: 65997-17-3	1 - <5
titanium dioxide	TITANIUM DIOXIDE	CAS: 13463-67-7	1 - <5
Xylene	Xylene	CAS: 1330-20-7	1 - <5
ethylbenzene	ETHYLBENZENE	CAS: 100-41-4	0.1 - <1
ethanol	ETHYL ALCOHOL	CAS: 64-17-5	0.1 - <1
Zinc powder - zinc dust (stabilized)	ZINC	CAS: 7440-66-6	0.1 - <1

Section 3. Composition/information on ingredients

Methyl alcohol	Methyl alcohol	CAS: 67-56-1	0.1 - <1
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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.

Section 4. First aid measures

- A. 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.
- B. 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.
- C. 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.
- D. Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.
- E. 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

- A. Extinguishing media**
- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- B. Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
halogenated compounds
metal oxide/oxides

Section 5. Fire-fighting measures

- C. Special equipment for fire-fighting** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Fire-fighting procedures** : 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.

Section 6. Accidental release measures

- A. Personal precautions, protective equipment and emergency procedures** : 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- B. 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.
- C. Methods and materials for containment and cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach 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

- A. 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. Avoid release to the environment. Refer to special instructions/safety data sheet. 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

Section 7. Handling and storage

transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

B. Conditions for safe storage, including any incompatibilities

: Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in 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

A. Occupational exposure limits

Ingredient name	Exposure limits
Talc , not containing asbestiform fibres	Ministry of Employment and Labor (Republic of Korea, 7/2018). TWA: 2 mg/m ³ 8 hours. Form: fibers
glass, oxide, chemicals	Ministry of Employment and Labor (Republic of Korea, 7/2018). TWA: 10 mg/m ³ 8 hours. Form: fibers
titanium dioxide	Ministry of Employment and Labor (Republic of Korea, 7/2018). TWA: 10 mg/m ³ 8 hours. Form: total dust with less than 1% of free SiO ₂
Xylene	Ministry of Employment and Labor (Republic of Korea, 7/2018). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.
ethylbenzene	Ministry of Employment and Labor (Republic of Korea, 7/2018). STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours.
ethanol	Ministry of Employment and Labor (Republic of Korea, 7/2018). TWA: 1000 ppm 8 hours.
Methyl alcohol	Ministry of Employment and Labor (Republic of Korea, 7/2018). Absorbed through skin. STEL: 250 ppm 15 minutes. TWA: 200 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.

B. 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.

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.

C. Personal protective equipment

- 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.
- Eye protection** : Chemical splash goggles.
- 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.
- 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.

Section 9. Physical and chemical properties

A. Appearance

Physical state : Liquid.

Color : Yellow.

B. Odor : Aromatic.

C. Odor threshold : Not available.

D. pH : Not available.

E. Melting/freezing point : Not available.

F. Boiling point/boiling range : >37.78°C (>100°F)

G. Flash point : Closed cup: 73°C (163.4°F)

H. Evaporation rate : Not available.

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

J. Lower and upper explosive (flammable) limits : Greatest known range: Lower: 1.3% Upper: 13% (benzyl alcohol)

K. Vapor pressure : Not available.

L. Solubility : Insoluble in the following materials: cold water.

Section 9. Physical and chemical properties

- M. Vapor density : Not available.
- N. Relative density : 1.36
- O. Partition coefficient: n-octanol/water : Not available.
- P. Auto-ignition temperature : Not available.
- Q. Decomposition temperature : Not available.
- R. Viscosity : Kinematic (40°C (104°F)): >0.21 cm²/s (>21 cSt)
- S. Molecular weight : Not applicable.

Section 10. Stability and reactivity

- A. Chemical stability : The product is stable.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
- B. Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.
- C. Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
- D. Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/oxides

Section 11. Toxicological information

- A. Information on the likely routes of exposure : Not available.

Potential acute health effects

- Inhalation : Harmful if inhaled.
- Ingestion : No known significant effects or critical hazards.
- Skin contact : Causes skin irritation. May cause an allergic skin reaction.
- Eye contact : Causes serious eye irritation.

Over-exposure signs/symptoms

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

B. Health hazards

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	LD50 Dermal	Rabbit	>2 g/kg	-
benzyl alcohol	LD50 Oral	Rat	11.4 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m ³	4 hours
titanium dioxide	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1.23 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
Xylene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
ethylbenzene	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
ethanol	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
Zinc powder - zinc dust (stabilized)	LD50 Oral	Rat	3.5 g/kg	-
	LC50 Inhalation Vapor	Rat	124700 mg/m ³	4 hours
Methyl alcohol	LD50 Oral	Rat	7 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5.4 mg/l	4 hours
	LD50 Oral	Rat	>2000 mg/kg	-
Methyl alcohol	LC50 Inhalation Gas.	Rat	145000 ppm	1 hours
	LC50 Inhalation Gas.	Rat	64000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-

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

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Skin - Moderate irritant	Rabbit	-	-	-
Xylene	Eyes - Moderate irritant	Rabbit	-	-	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

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
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	skin	Mouse	Sensitizing

Conclusion/Summary

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

Section 11. Toxicological information

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

Mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

Teratogenicity

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

Specific target organ toxicity (single exposure)

Name	Classification	Route of exposure	Target organs
Talc , not containing asbestiform fibres	Category 3	Not applicable.	Respiratory tract irritation
Xylene	Category 3	Not applicable.	Narcotic effects
Methyl alcohol	Category 1	Not determined	Not determined

Specific target organ toxicity (repeated exposure)

Name	Classification	Route of exposure	Target organs
Xylene	Category 1	Not determined	central nervous system (CNS), kidneys and liver

Aspiration hazard

Name	Result
benzyl alcohol	ASPIRATION HAZARD - Category 2
ethylbenzene	ASPIRATION HAZARD - Category 1

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. 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 : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Additional information

Section 11. Toxicological information

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. Emits toxic fumes when heated.

Chemical name	Common name	CAS #	GHS Classification
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	EPOXY RESIN	25068-38-6	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2
Talc , not containing asbestiform fibres	Talc, non-asbestos form	14807-96-6	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
1,6-bis(2,3-epoxypropoxy) hexane	1,6-HEXANDIOLGLYCIDETHER	16096-31-4	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3
benzyl alcohol	BENZYL ALCOHOL	100-51-6	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 ASPIRATION HAZARD - Category 2
glass, oxide, chemicals titanium dioxide Xylene	GLASS OXIDES TITANIUM DIOXIDE Xylene	65997-17-3 13463-67-7 1330-20-7	Not classified. CARCINOGENICITY - Category 2 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS), kidneys, liver) - Category 1
ethylbenzene	ETHYLBENZENE	100-41-4	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 ASPIRATION HAZARD - Category 1
ethanol	ETHYL ALCOHOL	64-17-5	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 CARCINOGENICITY - Category 2
Zinc powder - zinc dust	ZINC	7440-66-6	SUBSTANCES AND MIXTURES, WHICH IN

Section 11. Toxicological information

(stabilized)			CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 3 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
Methyl alcohol	Methyl alcohol	67-56-1	

Section 12. Ecological information

A. Ecotoxicity

Product/ingredient name	Result	Species	Exposure
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Chronic NOEC 0.3 mg/l	Daphnia	21 days
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish	96 hours
ethanol	Acute EC50 7640 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
Zinc powder - zinc dust (stabilized)	Acute EC50 0.106 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Chronic NOEC 0.0727 mg/l Fresh water	Daphnia - Daphnia Magna	21 days
Methyl alcohol	Acute LC50 13 mg/l Fresh water	Fish	96 hours

B. Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	OECD 301F	5 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	-	-	Not readily
benzyl alcohol	-	-	Readily
Xylene	-	-	Readily
ethylbenzene	-	-	Readily
ethanol	-	-	Readily

C. Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	3	31	low
benzyl alcohol	1.1	-	low
Xylene	3.16	7.4 to 18.5	low
ethylbenzene	3.15	79.43	low
ethanol	-0.31	-	low
Methyl alcohol	-0.77	-	low

D. Mobility in soil

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

E. Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

A. 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.

B. Disposal precautions

: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
A. UN number	UN3082	UN3082	UN3082
B. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)
C. Transport hazard class(es)	9	9	9
D. Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes.
E. Marine pollutant substances	Not applicable.	(reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)	Not applicable.

Section 14. Transport information

Additional information

- UN** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

F. Special precaution which a user to be aware of or needs to comply with in connection with transport or transportation

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.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA article 37 (Harmful substances prohibited from manufacture) : None of the components are listed.

ISHA article 38 (Harmful substances requiring permission) : None of the components are listed.

Article 2 of Youth Protection Act on Substances Hazardous to Youth : It is not allowed to sell to persons under the age of 19.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

Talc , not containing asbestiform fibres
glass, oxide, chemicals
titanium dioxide
Xylene
ethylbenzene
ethanol
Methyl alcohol

ISHA Enforcement Regs Annex 11-3 (Exposure standards established for harmful factors) : None of the components are listed.

ISHA Enforcement Regs Annex 11-5 (Harmful factors subject to Work Environment Measurement) : The following components are listed: Talc, non-asbestos form/Soap stone less than 1% crystalline silica; (Mineral dust), Xylene, o,m,p-isomers Preparations containing material at weight ratio of 1% or more, Glass fiber dust, Titanium dioxide Preparations containing material at weight ratio more than 1%

ISHA Enforcement Regs Annex 12-2 (Harmful Factors Subject to Special Health Check-up) : The following components are listed: Xylene, Glass fiber dust

Section 15. Regulatory information

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) : The following components are listed: xylene, titanium dioxide

B. Regulation according to Chemicals Control Act

CCA Article 20 Toxic Chemicals (K-Reach Article 20) : Not applicable

CCA Article 18 Prohibited (K-Reach Article 27) : None of the components are listed.

CCA Article 20 Restricted (K-Reach Article 27) : None of the components are listed.

CCA Article 11 (TRI) : The following components are listed: Xylene including o-,m-,p- isomer

Korea inventory : All components are listed or exempted.

CCA Article 39 (Accident Precaution Chemicals) : None of the components are listed.

C. Dangerous Materials Safety Management Act : Not applicable.

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

E. Regulation according to other foreign laws

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

A. References : Korean Ministry of Environment; Chemical Control Act
Korean Ministry of Labor; Industrial Safety and Health Act
NIER Notice
Registry of Toxic Effects of Chemical Substances (RTECS)
U.S. Environmental Protection Agency, AQUIRE (Aquatic toxicity Information Retrieval) ECOTOX Database System.

B. Date of issue/Date of revision : 1/15/2020

C. Version : 6.01
Prepared by : EHS

D. Other

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method
STOT RE 2, H373 (central nervous system (CNS), kidneys, liver)	Calculation method
Aquatic Chronic 2, H411	Calculation method

✔ Indicates information that has changed from previously issued version.

Disclaimer

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.