SAFETY DATA SHEET



Date of issue/Date of revision24 February 2020Version 4

Section 1. Identification		
Product code	: 00324028	
Product name	: SIGMASHIELD 880 BASE RAL 7001	
Product type	: Liquid.	
Relevant identified uses of Identified uses Coating. Paints. Painting-re	<u>the substance or mixture and uses advised against</u> lated materials.	
Supplier's details	: PPG Industries (Singapore) Pte. Ltd., No. 1 Tuas Basin Close, Singapore 638803. Tel +65 68653737	
Emergency telephone number (with hours of operation)	: CHEMTREC +(65)-31581349 (CCN 17704)	

Section 2. Hazards identification

Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 GERM CELL MUTAGENICITY - Category 2
	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements, including precautionary statements

Hazard pictograms	
Signal word Hazard statements	 Warning Flammable liquid and vapor. Harmful if inhaled. Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause respiratory irritation.
Descention and statements	

Precautionary statements

Singapore	English (US)	Page: 1/14
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Section 2. Hazards identification

Prevention	:	Detain 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 breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	:	F exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. 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. If eye irritation persists: Get medical attention.
Storage	1	Store locked up. Store in a well-ventilated place. Keep cool.
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.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
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CAS number/other identifiers

CAS number	: Not applicable.
EC number	: Mixture.

Ingredient name	%	CAS number
s-[4-(2,3-epoxipropoxi)phenyl]propane	20 - <25	1675-54-3
Talc , not containing asbestiform fibres	10 - <20	14807-96-6
Epoxy Resin (700 <mw<=1100)< td=""><td>3 - <5</td><td>25036-25-3</td></mw<=1100)<>	3 - <5	25036-25-3
Phenol, methylstyrenated	3 - <5	68512-30-1
ethylbenzene	3 - <5	100-41-4
xylene	3 - <5	1330-20-7
2-methylpropan-1-ol	1 - <3	78-83-1
2,3-epoxypropyl neodecanoate	1 - <3	26761-45-5
Octadecanamide, N,N'-1,6-hexanediylbis[12-hydroxy-	1 - <3	55349-01-4

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

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/e	fects, acute and delayed			
Potential acute health effect	<u>ts</u>			
Eye contact	: Causes serious eye irritation.			
Inhalation	: Harmful if inhaled. May cause respiratory irritation.			
Skin contact	: Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.			
Ingestion	: No known significant effects or critical hazards.			
<u>Over-exposure signs/symp</u>	<u>toms</u>			
Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness			
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing			
Skin contact	: Adverse symptoms may include the following: irritation redness dryness cracking			
Ingestion	: No specific data.			
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)

Singapore	English (US)	Page: 3/14
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Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO ₂ , 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.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon oxides nitrogen oxides 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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

contractor.

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).
Methods and materials for co	nta	ainment 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

Product name SIGMASHIELD 880 BASE RAL 7001

Section 6. Accidental release measures

Large spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). 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.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

procedures 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 ontrols : Use only with adequate ventilation. Use process enclosures, local exhaust ventilatior 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. invironmental exposure ontrols : 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 equipme will be necessary to reduce emissions to acceptable levels. ndividual protection measures : Wash hands, forearms and face thoroughly after handling chemical products, befor 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 clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eye/face protection : Chemical splash goggles.	Ingredient name		Exposure limits
(Singapore, 22006). PEL (short term): 543 mg/m ³ 15 minutes. PEL (long term): 125 ppm 15 minutes. PEL (long term): 134 mg/m ³ 8 hours. PEL (long term): 100 ppm 8 hours.		orm fibres	(Singapore, 2/2006). PEL (long term): 2 mg/m ³ 8 hours.
xylene Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 651 mg/m³ 15 minutes. PEL (short term): 150 ppm 15 minutes. PEL (long term): 100 ppm 8 hours. PEL (long term): 100 ppm 8 hours. PEL (long term): 152 mg/m³ 8 hours. PEL (long term): 152 mg/m³ 8 hours. PEL (long term): 50 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 effectivenes 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. ppropriate engineering ontrols : Use only with adequate ventilation. Use process enclosures, local exhaust ventilatio 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. explosion-proof ventilation or work process equipment should be checked to ensur they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipme will be necessary to reduce emissions to acceptable levels. utividual protection measures : Wash hands, forearms and face thoroughly after handling chemical products, befor eating, smoking and using the lavatory an	ethylbenzene		(Singapore, 2/2006). PEL (short term): 543 mg/m ³ 15 minutes. PEL (short term): 125 ppm 15 minutes. PEL (long term): 434 mg/m ³ 8 hours.
2-methylpropan-1-ol Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 152 mg/m³ 8 hours. PEL (long term): 50 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 effectivenes 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 ontrols : 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. : Emissions from ventilation or work process equipment should be checked to ensur they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipme will be necessary to reduce emissions to acceptable levels. adividual protection measures : Wash hands, forearms and face thoroughly after handling chemical products, befor 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. <td>xylene</td> <td></td> <td>Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 651 mg/m³ 15 minutes. PEL (short term): 150 ppm 15 minutes. PEL (long term): 434 mg/m³ 8 hours.</td>	xylene		Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 651 mg/m ³ 15 minutes. PEL (short term): 150 ppm 15 minutes. PEL (long term): 434 mg/m ³ 8 hours.
procedures 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 ontrols : 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. invironmental exposure ontrols : 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. adividual protection measures : Wash hands, forearms and face thoroughly after handling chemical products, befor 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 clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eye/face protection : Chemical splash goggles.	2-methylpropan-1-ol		Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 152 mg/m ³ 8 hours.
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ontrolsthey comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipme will be necessary to reduce emissions to acceptable levels.Individual protection measures: Wash hands, forearms and face thoroughly after handling chemical products, befor 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 clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.Eye/face protection: Chemical splash goggles.		or other engineering controls to ke below any recommended or statu keep gas, vapor or dust concentra	eep worker exposure to airborne contaminants tory limits. The engineering controls also need to ations below any lower explosive limits. Use
Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.Eye/face protection: Chemical splash goggles.		they comply with the requirements cases, fume scrubbers, filters or e	s of environmental protection legislation. In some ngineering modifications to the process equipmer
 eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eye/face protection Chemical splash goggles. 	ndividual protection measure	<u>95</u>	
Skin protection	Hygiene measures	eating, smoking and using the lave Appropriate techniques should be Contaminated work clothing shou contaminated clothing before reus	atory and at the end of the working period. used to remove potentially contaminated clothing ld not be allowed out of the workplace. Wash sing. Ensure that eyewash stations and safety
	Eye/face protection	: Chemical splash goggles.	
			Page: 6/ [*]

Product code 00324028

Product name SIGMASHIELD 880 BASE RAL 7001

Section 8. Exposure controls/personal 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.

Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	: Liquid.
Color	: Gray.
Odor	: Aromatic.
рН	insoluble in water.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 29°C (84.2°F)
Evaporation rate	: Highest known value: 0.84 (ethylbenzene) Weighted average: 0.77compared with butyl acetate
Flammability (solid, gas)	: liquid
Vapor pressure	: Highest known value: <1.6 kPa (<12 mm Hg) (at 20°C) (2-methylpropan-1-ol). Weighted average: 0.31 kPa (2.33 mm Hg) (at 20°C)
Vapor density	: Highest known value: 11.7 (Air = 1) (bis-[4-(2,3-epoxipropoxi)phenyl]propane). Weighted average: 9.08 (Air = 1)
Relative density	: 1.26
Solubility	: Insoluble in the following materials: cold water.
Auto-ignition temperature	: Lowest known value: 276°C (528.8°F) (2,3-epoxypropyl neodecanoate).
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm²/s (>21 cSt)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	 Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides metal oxide/oxides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
bis-[4-(2,3-epoxipropoxi)	LD50 Dermal	Rabbit	23000 mg/kg	-
phenyl]propane				
	LD50 Oral	Rat	15000 mg/kg	-
Epoxy Resin (700 <mw <=1100)</mw 	LD50 Dermal	Rat	>2000 mg/kg	-
,	LD50 Oral	Rat	>2000 mg/kg	-
Phenol, methylstyrenated	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
-	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
xylene	LD50 Dermal	Rabbit	>1.7 g/kg	-
-	LD50 Oral	Rat	4.3 g/kg	-
2-methylpropan-1-ol	LC50 Inhalation Vapor	Rat	24.6 mg/l	4 hours
	LD50 Dermal	Rabbit	2460 mg/kg	-
	LD50 Oral	Rat	2830 mg/kg	-
2,3-epoxypropyl neodecanoate	LD50 Dermal	Rat	3800 mg/kg	-
	LD50 Oral	Rat	9.6 g/kg	-

Irritation/Corrosion

Product code 00324028

Product name SIGMASHIELD 880 BASE RAL 7001

Section 11. Toxicological information

Product/ingredient name	Result		Species	Scor	e Expo	sure	Observation
bis-[4-(2,3-epoxipropoxi)	Eyes - Redness o	f the	Rabbit	0.4	24 ho	urs	-
phenyl]propane	conjunctivae						
	Eyes - Mild irritant		Rabbit	-	24 ho	urs	-
	Skin - Erythema/E	Eschar	Rabbit	0.8	4 hou		-
	Skin - Edema		Rabbit	0.5	4 hou		-
	Skin - Mild irritant		Rabbit	-	4 hou		-
xylene	Skin - Moderate ir	ritant	Rabbit	-		urs 500	-
					mg		
Conclusion/Summary							
Skin :	There are no data a	available o	on the mixture	itself.			
Eyes :	There are no data a	available o	on the mixture	itself.			
Respiratory :	There are no data a	available o	on the mixture	itself.			
ensitization							
Product/ingredient name	Route of	Species			Result		
	exposure	-					
bis-[4-(2,3-epoxipropoxi)	skin	Mouse			Sensitizing		
phenyl]propane					g		
Conclusion/Summary							
	There are no data	ovoiloblo d	n the misture	itaalf			
	There are no data a						
	There are no data a	available o	on the mixture	itself.			
<u>lutagenicity</u>							
Conclusion/Summary :	There are no data	available	on the mixtur	e itself.			
arcinogenicity							
	These second data						
· · · · · · · · · · · · · · · · · · ·	There are no data	available	on the mixture	e ilsen.			
Reproductive toxicity							
Conclusion/Summary :	There are no data	available	on the mixtur	e itself.			
<u>eratogenicity</u>							
Conclusion/Summary :	There are no data	available	on the mixtur	e itself.			
specific target organ toxicit	y (single exposure)					
Name		-	Category		Route of	Тэ	get organs
ITUING			Category		exposure	i ai	yerorgans
Tala not containing ashestif	orm fibros		Category 3		Not applicable		piraton (tract
Talc , not containing asbestife			Category 3	ľ			spiratory tract ation
xylene			Category 3	l,	Not applicable		spiratory tract
луюне							ation
2-methylpropan-1-ol			Category 3	,	Not applicable		cotic effects
			Category 3		Not applicable		spiratory tract
			2	[ation
pecific target organ toxicit	y (repeated exposi	ure)	1			I	
			Catagoria		Route of	Ter	get organs
Namo						1121	
Name			Category				yet organs
Name ethylbenzene			Category Category 2		exposure Not determine		aring organs

Singapore	English (US)	Page: 9/14
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reaction.

Section 11. Toxicological information

Aspiration hazard

Name	Result
	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure	: Not available.
Potential acute health effect	<u>ts</u>
Eye contact	: Causes serious eye irritation.
Inhalation	: Harmful if inhaled. May cause respiratory irritation.
Skin contact	: Causes skin irritation. Defatting to the skin. May cause an allergic skin r
Ingestion	: No known significant effects or critical hazards.

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
Skin contact	Adverse symptoms may include the following: irritation redness dryness cracking
Ingestion	No specific data.

Delayed and immediate effe	<u>cts</u>	and also chronic effects from short and long term exposure
Short term exposure		
Potential immediate effects	;	Not available.
Potential delayed effects	:	Not available.
<u>Long term exposure</u>		
Potential immediate effects	1	Not available.
Potential delayed effects	:	Not available.
Potential chronic health effe	ect	<u>S</u>
General	:	✓rolonged 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	1	No known significant effects or critical hazards.
Mutagenicity	1	Suspected of causing genetic defects.

Singapore	English (US)	Page: 10/14
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Product name SIGMASHIELD 880 BASE RAL 7001

Section 11. Toxicological information

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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
	15283.9 mg/kg 30.54 mg/l 3.33 mg/l

Other information

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the epoxy constituent(s) and considering toxicological data on similar mixtures, this mixture may be a skin sensitizer and an irritant. It contains low-molecular weight epoxy constituents which are irritating to eyes, mucous membranes and skin. Repeated skin contact may lead to irritation and to sensitization, possibly with cross-sensitization to other epoxies. Skin contact with the mixture and exposure to spray, mist and vapors should be avoided.

Contains bis-[4-(2,3-epoxipropoxi)phenyl]propane, Epoxy Resin (700<MW<=1100), Phenol, methylstyrenated, 2,3-epoxypropyl neodecanoate, Octadecanamide, N,N'-1,6-hexanediylbis[12-hydroxy-. May produce an allergic reaction.

Section 12. Ecological information

Toxicity

Product name SIGMASHIELD 880 BASE RAL 7001

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Acute LC50 1.8 mg/l Fresh water	Daphnia - daphnia magna	48 hours
	Chronic NOEC 0.3 mg/l	Daphnia	21 days
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish	96 hours
2-methylpropan-1-ol	Acute EC50 1100 mg/l	Daphnia	48 hours
2,3-epoxypropyl neodecanoate	Acute EC50 3.5 mg/l	Algae	96 hours
	Acute EC50 4.8 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.6 mg/l	Fish - Oncorhynchus mykiss	96 hours
Conclusion/Summary	: There are no data available on the	mixture itself.	I

Persistence/degradability

Conclusion/Summary

: There are no data available on the mixture itself.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxipropoxi)	-	-	Not readily
phenyl]propane ethylbenzene	-	-	Readily
xylene	-	-	Readily
2,3-epoxypropyl neodecanoate	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
ethylbenzene	3.15	79.43	low
xylene 2-methylpropan-1-ol	3.16 0.76	7.4 to 18.5 -	low low
2,3-epoxypropyl neodecanoate	4.4	-	high

Mobility in soil

Soil/water partition coefficient (Koc)

: Not available.

Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	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.

Section 15. Regulatory information

Singapore - hazardous chemicals under government control

None.

International regulations Montreal Protocol Not listed.

Section 16. Other information

<u>History</u>	
Date of issue/Date of revision	: 24 February 2020
Date of previous issue	: 2/21/2020
Version	: 4
Prepared by	: EHS
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.