SAFETY DATA SHEET



Date of issue/Date of revision22 September 2022Version 8

Section 1. Identification of the substance/mixture and of the company/undertaking

Product code	: 00358516	
Product name	: SIGMAGUARD 603 HARDENER	
Other means of identification	: Not available.	
Product type	: Liquid.	

Relevant identified uses of the substance or mixture and uses advised against		
Product use	Coating. Professional applications, Used by spraying.	
Uses advised against	: Product is not intended, labelled or packaged for consumer use.	
Supplier's details	: PPG Coatings (Thailand) Co., Ltd. 15 Rama 9 Road, Kwaeng Huamark, Khet Bangkapi, Bangkok 10240 Thailand T: 662-319-4190 #224 F: 662-319-4189	
Emergency telephone number (with hours of operation)	: CHEMTREC 001-800-13-203-9987 (CCN 17704)	

Section 2. Hazards identification

Classification of the substance or mixture	 AMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1A ASPIRATION HAZARD - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2

Section 2. Hazard	Is identification
	Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 7.5%
	Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 9.5%
	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 65.4%
	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 41.9%
GHS label elements	
Hazard pictograms	
Signal word	: Danger
Hazard statements	: Combustible liquid. Harmful if swallowed, in contact with skin or if inhaled. May be harmful if swallowed and enters airways. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Wear protective gloves, protective clothing and eye or face protection. Keep away from flames and hot surfaces. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	: Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for severa minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not	: None known.

result in classification

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Section 3. Composition/information on ingredients

Substance/mixture

CAS number

: Mixture

CAS number/other identifiers

: Not applicable.

Ingredient name	%	CAS number
Propylidynetrimethanol, propoxylated, reaction products with ammonia	50-100	39423-51-3
3-aminomethyl-3,5,5-trimethylcyclohexylamine	20- <25	2855-13-2
benzyl alcohol	10- <20	100-51-6
Epoxy Amine Resin	5- <10	SUB114180
2,4,6-tris(dimethylaminomethyl)phenol	3 - <5	90-72-2
salicylic acid	1- <3	69-72-7

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	 Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
Inhalation	: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
Skin contact	 Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion	 If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important sympto	ms/effects, acute and delayed
Potential acute health	<u>effects</u>
Eye contact	: Causes serious eye damage.
Inhalation	: Harmful if inhaled.
Skin contact	: Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
Ingestion	: Harmful if swallowed. May be harmful if swallowed and enters airways.
Over-exposure signs/s	<u>symptoms</u>
Eye contact	: Adverse symptoms may include the following: pain watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: pain or irritation redness blistering may occur

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Section 4. First aid measures

Ingestion

: Adverse symptoms may include the following: stomach pains nausea or vomiting

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 c The exposed person may need to be kept under medical surveillance for 48	
Specific treatments	No specific treatment.	
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training 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 per- providing aid to give mouth-to-mouth resuscitation. Wash contaminated clot thoroughly with water before removing it, or wear gloves.	riate son

See toxicological information (Section 11)

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	: Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon oxides nitrogen oxides
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 precaution	s, protective equipme	ent and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions Methods and materials for cor	 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.
	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

	Precautions for safe handling	: 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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. 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. Empty containers retain product residue and can be hazardous. Do not reuse container.
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Section 7. Handling and storage

Conditions for safe storage,	: Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in
including any	accordance with local regulations. Store in a segregated and approved area. Store
incompatibilities	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 limi None.	<u>ts</u>	
Recommended monitoring procedures	:	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
Appropriate engineering controls	:	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection measur	<u>'es</u>	
Hygiene measures	:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye protection	:	Chemical splash goggles and face shield.
Skin protection		

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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.
Other skin protection	 Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance	
Physical state	: Liquid.
Color	: Not available.
Odor	: Amine-like. [Strong]
Odor threshold	: Not available.
рН	: insoluble in water.
Melting point	 May start to solidify at the following temperature: 8°C (46.4°F) This is based on data for the following ingredient: 3-aminomethyl-3,5,5-trimethylcyclohexylamine. Weighted average: -14.18°C (6.5°F)
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 80°C (176°F)
Evaporation rate	: 0.007 (benzyl alcohol) compared with butyl acetate
Flammability (solid, gas)	: liquid
Lower and upper explosive (flammable) limits	: Greatest known range: Lower: 1.3% Upper: 13% (benzyl alcohol)
Vapor pressure	 Highest known value: 0.7 kPa (5.1 mm Hg) (at 20°C) (Propylidynetrimethanol, propoxylated, reaction products with ammonia). Weighted average: 0.4 kPa (3 mm Hg) (at 20°C)
Vapor density	: Highest known value: 3.7 (Air = 1) (benzyl alcohol).
Relative density	: 0.98

Section 9. Physical	and chemical	properties
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Solubility(ies)		Media	Result		
		cold water	Not soluble		
Partition coefficient: n- octanol/water	:	Not applicable.			
Auto-ignition temperature	:	Lowest known value: 320°C (608°F) (Propylidynetrimethanol, propoxylated, reaction products with ammonia).			
Decomposition temperature	:	Stable under recommended storage and handling conditions (see Section 7).			
Viscosity	:	Kinematic (40°C): <14 mm²/s			

Section 10. Stability and reactivity

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Propylidynetrimethanol, propoxylated, reaction products with ammonia	LD50 Dermal	Rabbit	0.4 g/kg	-
	LD50 Oral	Rat	0.22 g/kg	-
3-aminomethyl-	LC50 Inhalation Dusts and mists	Rat	>5.01 mg/l	4 hours
3,5,5-trimethylcyclohexylamine			Ū,	
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	1030 mg/kg	-
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m ³	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1.23 g/kg	-
2,4,6-tris(dimethylaminomethyl) phenol	LD50 Dermal	Rabbit	1.28 g/kg	-
	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-

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Section 11. Toxicological information

salicylic acid			LD50 Oral		Rat		0.891 g/kg	-
Conclusion/Summary	: There a	re no data	available	on the mixtu	ire itself.			
rritation/Corrosion								
Product/ingredient name	Result			Species	Scor	е	Exposure	Observation
2,4,6-tris (dimethylaminomethyl) phenol	Skin - \	Skin - Visible necrosis		Rabbit	-		4 hours	7 days
Conclusion/Summary	1			•				
Skin :	There a	re no data	available	on the mixtu	ıre itself.			
Eyes :	There a	re no data	available	on the mixtu	ıre itself.			
Respiratory :	There a	re no data	available	on the mixtu	ire itself.			
Sensitization								
Product/ingredient name		coute of Species xposure				Result		
3-aminomethyl- 3,5,5-trimethylcyclohexylamine	skin e	skin Guinea		big		Sensitizing		
Conclusion/Summary						•		
Skin :	There a	There are no data available on the mixture itself.						
Respiratory :	There a	There are no data available on the mixture itself.						
<u>Autagenicity</u>								
Conclusion/Summary :	There a	There are no data available on the mixture itself.						
Carcinogenicity								
Conclusion/Summary :	There a	re no data	available	on the mixtu	ıre itself.			
Reproductive toxicity								
Conclusion/Summary :	There a	There are no data available on the mixture itself.						
<u>Feratogenicity</u>								
Conclusion/Summary :	There are no data available on the mixture itself.							
Specific target organ toxici	ty (single	exposure						
Not available.			-					

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
benzyl alcohol	ASPIRATION HAZARD - Category 2

Information on the likely : Not available. routes of exposure

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Section 11. Toxicological information

Potential acute health effects

Eye contact	: Causes serious eye damage.
Inhalation	: Harmful if inhaled.
Skin contact	: Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
Ingestion	: Harmful if swallowed. May be harmful if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: Adverse symptoms may include the following: stomach pains nausea or vomiting

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

Short term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Long term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	<u>ects</u>
General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Dermal	711.53 mg/kg 1528.01 mg/kg 3.73 mg/l

Other information

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death.

Section 12. Ecological information

Toxicity

Fish	96 hours
Daphnia - Daphnia longispina - Neonate	48 hours
Daphnia - Daphnia magna - Neonate	21 days
N Da N	eonate aphnia - Daphnia magna -

Persistence/degradability

Conclusion/Summary

Not available.

: There are no data available on the mixture itself.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Propylidynetrimethanol, propoxylated, reaction products with ammonia	-1.13	-	low
3-aminomethyl-3,5,5-trimethylcyclohexylamine	0.99	-	low
benzyl alcohol	0.87	-	low
2,4,6-tris(dimethylaminomethyl)phenol	0.219	-	low
salicylic acid	2.21 to 2.26	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) Other adverse effects

- : Not available.
- : No known significant effects or critical hazards.

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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	ΙΑΤΑ
UN number	UN3066	UN3066	UN3066
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	8	8	8
Packing group	I	II	Π
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(Polyoxy propylene diamine)	Not applicable.

Additional information

UN	: None identified.
IMDG	: The marine pollutant mark is not required when transported in sizes of ≤ 5 L or ≤ 5 kg.
ΙΑΤΑ	: The environmentally hazardous substance mark may appear if required by other transportation regulations.

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 : Not applicable. to IMO instruments

Section 15. Regulatory information

: Listed

Safety, health and environmental regulations specific for the product

Harmful Chemicals List

: No known specific national and/or regional regulations applicable to this product (including its ingredients).

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 16. Other information

<u>History</u>	
Date of issue/Date of revision	: 22 September 2022
Date of previous issue	: 5/20/2021
Version	: 8
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.

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.