SAFETY DATA SHEET



The information in this Safety Data Sheet is required pursuant to GHS UN rev. 7

Date of issue/Date of revision 17 July 2023 Version 9

Section 1. Identification

Product code	: 00254182
Product name	: SIGMASHIELD 905 HARDENER CLEAR
Product type	: Liquid.
Other means of identification Not available.	
Relevant identified uses of the	e 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.
Company/undertaking identification	 PPG Industries Sales, Inc. and PPG Coatings (Philippines), Inc. 3rd Floor First Life Center 174 Salcedo St., Legaspi Village Makati City 1229, Philippines Tel # 00632- 752-6773/ Fax # 00632-752-6771
Emergency telephone number	: CHEMTREC +(63) 2-395-3308 (CCN 17704)

Section 2. Hazards identification

Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 4
	ACUTE TOXICITY (dermal) - Category 3
	ACUTE TOXICITY (inhalation) - Category 3 SKIN CORROSION/IRRITATION - Category 1A
	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
	SKIN SENSITIZATION - Category 1
	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2
	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 6.1%
	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 21.2%
GHS label elements	
Hazard pictograms	
Signal word	: Danger

Product code 00254182 Product name SIGMASHIELD 905 HARDENER CLEAR

Hazard statements	: Combustible liquid. Harmful if swallowed.
	Toxic in contact with skin or if inhaled. Causes severe skin burns and eye damage.
	May cause an allergic skin reaction.
	May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	Collect spillage. IF 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.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.

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

result in classification

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

CAS number/other identifiers

CAS number : Not applicable.		
Ingredient name	%	CAS number
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	50 - 100	6864-37-5
benzyl alcohol	10 - <20	100-51-6
butanone	5 - <10	78-93-3
2,4,6-tris(dimethylaminomethyl)phenol	3 - <5	90-72-2
N-(3-(trimethoxysilyl)propyl)ethylenediamine	1 - <3	1760-24-3

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	<u>y first aid measures</u>
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 symptom	s/effects, acute and delayed
Potential acute health e	ffects
Eye contact	: Causes serious eye damage.
Inhalation	: Toxic if inhaled.
Skin contact	: Causes severe burns. Toxic in contact with skin. Defatting to the skin. May cause an allergic skin reaction.
Ingestion	: Harmful if swallowed.
<u>Over-exposure signs/sy</u>	<u>mptoms</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 dryness cracking blistering may occur
Ingestion	: Adverse symptoms may include the following: stomach pains

Indication of immediate med	I attention and special treatment needed, if necessary	
Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delay The exposed person may need to be kept under medical surveillance for 48 hour	
Specific treatments	No specific treatment.	
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. I 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.	9

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 metal oxide/oxides Formaldehyde.
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

Product code 00254182 Product name SIGMASHIELD 905 HARDENER CLEAR

Section 6. Accidental release measures

emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

	Precautions	for safe	handling
--	--------------------	----------	----------

Protective measures	: Fut 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 ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. 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

Ingredient name		Exposure limits	
b utanone		TLV (Philippines, 4/2016). TLV: 590 mg/m³ 8 hours. TLV: 200 ppm 8 hours.	
Recommended monitoring procedures		riate monitoring standards. Reference to nods for the determination of hazardous	
Appropriate engineering controls	ventilation or other engineering contro contaminants below any recommende also need to keep gas, vapor or dust	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.		

Section 8. Exposure controls/personal protection

Individual protection measures

Hygiene measures	:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
Skin protection		
Hand protection	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Gloves	:	nitrile neoprene
Body protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
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	:	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	1	Liquid.			
Color	1	Colorless.			
Odor	:	Characteristic.			
Odor threshold	:	Not available.			
Melting point/freezing point	:	Not available.			
Boiling point, initial boiling point, and boiling range	:	>37.78°C (>100°F)			
Flammability	:	Not available.			
Lower and upper explosive (flammable) limits	:	Not available.			
Flash point	:	Øosed cup: 61°C (141.8°F)			
Auto-ignition temperature	:	Ingredient name	°C	°F	Method
		2'-dimethyl-4,4'-methylenebis (cyclohexylamine)	275	527	

Product code	00254182
Product name	SIGMASHIELD 905 HARDENER CLEAR

Section 9. Physical and chemical properties

Decomposition temperature	÷	Not available.						
рН	1	Not applicable.	Not applicable.					
Viscosity	1	Kinematic (40°C): >2	21 mm²/s					
0 - 1 - 1 - 11(- (1		Media	Re	sult				
Solubility(ies)	1	cold water	No	t solubl	е			
Partition coefficient: n- octanol/water	:	Not applicable.						
Vapor pressure	:		Vapo	apor Pressure at 20°C		Vapor pressure at 50°C		
		Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method
		butanone	78.76	10.5				
Relative density	:	0.96			ļ			
Relative vapor density	:	Not available.						
Particle characteristics								
Median particle size	1	Not applicable.						

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 Formaldehyde. metal oxide/oxides
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine)	LC50 Inhalation Dusts and mists	Rat	420 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>0.2 g/kg	-
	LD50 Oral	Rat	>0.32 g/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	-
	1	1	1	I
			Philippines	Page: 7/1

Section 11. Toxicological information

	U			
butanone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
2,4,6-tris	LD50 Dermal	Rabbit	1.28 g/kg	-
(dimethylaminomethyl)				
phenol				
	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-
N-(3-(trimethoxysilyl)propyl)	LD50 Dermal	Rabbit	>2000 mg/kg	-
ethylenediamine				
	LD50 Oral	Rat	2413 mg/kg	-
Conclusion/Summary	: There are no data availa	ble on the mixture	itself.	•

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
₽,4,6-tris (dimethylaminomethyl) phenol	Skin - Visible necrosis	Rabbit	-	4 hours	7 days

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	
Conclusion/Summary	
Skin	: There are no data available on the mixture itself.
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	Category	Route of exposure	Target organs
Dutanone N-(3-(trimethoxysilyl)propyl)ethylenediamine	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name		Route of exposure	Target organs
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Category 2	-	-

Aspiration hazard

Section 11. Toxicological information

Name	Result
benzyl alcohol	ASPIRATION HAZARD - Category 2
butanone	ASPIRATION HAZARD - Category 2

Information on the likely routes of exposure	:	Not available.
Potential acute health effects	<u>5</u>	
Eye contact	1	Causes serious eye damage.
Inhalation	:	Toxic if inhaled.
Skin contact	:	Causes severe burns. Toxic in contact with skin. Defatting to the skin. May cause an allergic skin reaction.
Ingestion	1	Harmful if swallowed.
Symptoms related to the phy	<u>/sic</u>	cal, 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 dryness cracking blistering may occur
Ingestion	:	Adverse symptoms may include the following: stomach pains
Delaved and immediate effect	ts	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	ect	<u>s</u>
Not available.		
General	:	May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	1	No known significant effects or critical hazards.
Mutagenicity	1	No known significant effects or critical hazards.
Reproductive toxicity	:	No known significant effects or critical hazards.

Numerical measures of toxicity

Section 11. Toxicological information

Acute toxicity estimates

Route	ATE value
Dermal	619.45 mg/kg 400.86 mg/kg 0.65 mg/l

Other information

Prolonged or repeated contact may dry skin and cause irritation. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C (140F). Avoid contact with skin and clothing.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
(dimethylaminomethyl)phenol	Acute LC50 175 mg/l	Fish	96 hours
	EC50 597 mg/l	Fish	96 hours

Persistence and degradability

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

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
₽,2'-dimethyl-4,4'- methylenebis (cyclohexylamine)	1.8	-	Low
benzyl alcohol	0.87	-	Low
butanone	0.3	-	Low
2,4,6-tris (dimethylaminomethyl)pheno	0.219	-	Low

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

	1		
	UN	IMDG	ΙΑΤΑ
UN number	UN3470	UN3470	UN3470
UN proper shipping name	PAINT, CORROSIVE, FLAMMABLE	PAINT, CORROSIVE, FLAMMABLE	PAINT, CORROSIVE, FLAMMABLE
Transport hazard class(es)	8 (3)	8 (3)	8 (3)
Packing group	II	II	II
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.	(2,2'-dimethyl-4,4'- methylenebis (cyclohexylamine))	Not applicable.

Additional in	formation	
UN	: None identified.	
IMDG	: The marine pollutant mark is not required when transported in sizes of \leq 5 L or \leq 5 kg.	
ΙΑΤΑ	: The environmentally hazardous substance mark may appear if required by other transportation regulations.	
Special pre	cautions for user .: Transport within user's premises: always transport in closed containers that are	

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

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	: 17 July 2023
Date of previous issue	: 11/8/2021
Version	: 9
Prepared by	: EHS
ey 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

Procedure used to derive the classification

Classification	Justification
AMMABLE LIQUIDS - Category 4	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (dermal) - Category 3	Calculation method
ACUTE TOXICITY (inhalation) - Category 3	Calculation method
SKIN CORROSION/IRRITATION - Category 1A	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

V 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 us, 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.