

SAFETY DATA SHEET



Date of issue 25 September
2025

Version 5

Section 1. Identification

Chemical name : SIGMASHIELD 420/460/880/880GF HARDENER
GHS product identifier : SIGMASHIELD 420/460/880/880GF HARDENER
Code : 000001189162
Synonyms : 00445066; 00445067 ; 50880-BHARD/5L

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

Product use : Coating.
Professional applications, Used by spraying.

Supplier's details : PPG Industries International Inc. Taiwan Branch.
No.209, Hong Tzuenn Rd Ping Chen City, Taoyuan County, Taiwan
Tel: 886 3 3663922
886 3 3751639 (Automotive OEM Coatings Products).
Fax: 886 3 2182667

Emergency telephone number : +886-3-3663922
+886-911998320

Section 2. Hazards identification

Classification of the substance or mixture :  LAMMABLE LIQUIDS - Category 3
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 1
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
AQUATIC TOXICITY (ACUTE) - Category 2
AQUATIC TOXICITY (CHRONIC) - Category 1
 Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 33.4%
Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 33.4%
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 75.9%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 43.7%

GHS label elements

Section 2. Hazards identification

Hazard pictograms

:

**Signal word**

: Danger

Hazard statements

: ☒ Flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May damage fertility or the unborn child.
May cause damage to organs.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary statements**Prevention**

: ☒ Obtain, read and follow all safety instructions before use. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response

: ☒ Collect spillage. IF exposed or concerned, get medical advice. IF exposed or concerned: Get emergency medical help immediately. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately. Get medical help. IF SWALLOWED: Get medical help. Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Get medical help. Wash with plenty of water. Take off immediately all contaminated clothing. Immediately rinse with water for several minutes. If skin irritation or rash occurs: Get medical help. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help. Get medical help if you feel unwell.

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 result in classification

: Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Section 3. Composition/information on ingredients

Hazardous ingredients	% (w/w)	CAS no.	Type
Epoxy Amine Resin	≥25 - ≤50	SUB123903	[1]
xylene	≥10 - ≤20	1330-20-7	[1] [2]
Propylidynetrimethanol, propoxylated, reaction products with ammonia	≥10 - ≤20	39423-51-3	[1]
benzyl alcohol	≥10 - ≤17	100-51-6	[1]
2-methylpropan-1-ol	≥5 - ≤9.6	78-83-1	[1] [2]
bisphenol A	≥3 - ≤5	80-05-7	[1] [3]
m-phenylenebis(methylamine)	≥3 - ≤5	1477-55-0	[1]
ethylbenzene	≥3 - ≤5	100-41-4	[1] [2] [3]
2,4,6-tris(dimethylaminomethyl)phenol	≥1 - ≤3	90-72-2	[1]

Hazardous ingredients	% (w/w)	CAS number	Type
Epoxy Amine Resin	≥25 - ≤50	SUB123903	[1]
Xylene	≥10 - ≤20	1330-20-7	[1] [2]
Propylidynetrimethanol, propoxylated, reaction products with ammonia	≥10 - ≤20	39423-51-3	[1]
benzyl alcohol	≥10 - ≤17	100-51-6	[1]
Isobutyl Alcohol	≥5 - ≤9.6	78-83-1	[1] [2]
bisphenol A	≥3 - ≤5	80-05-7	[1] [3]
m-Xylenediamine	≥3 - ≤5	1477-55-0	[1]
ethylbenzene	≥3 - ≤5	100-41-4	[1] [2] [3]
2,4,6-Tris[(dimethylamino)methyl]phenol	≥1 - ≤3	90-72-2	[1]

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.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Toxic chemical substance

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**

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

Most important symptoms/effects, acute and delayed

Section 4. First aid measures

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 damage to organs following a single exposure in contact with skin. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. May cause damage to organs following a single exposure if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very 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 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. 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.

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- 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.

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

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
xylene	TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 3/2018) [xylenes] STEL 15 minutes: 125 ppm. STEL 15 minutes: 542.5 mg/m ³ . TWA 8 hours: 100 ppm. TWA 8 hours: 434 mg/m ³ .
2-methylpropan-1-ol	TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 3/2018) STEL 15 minutes: 75 ppm. STEL 15 minutes: 228 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 152 mg/m ³ .
ethylbenzene	TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 3/2018) STEL 15 minutes: 125 ppm. STEL 15 minutes: 542.5 mg/m ³ . TWA 8 hours: 100 ppm.

Section 8. Exposure controls/personal protection

TWA 8 hours: 434 mg/m³.

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.

Individual protection measures

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.

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

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.

Eye protection : Chemical splash goggles and face shield.

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

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 41°C (105.8°F)

Flammability (solid, gas) : Not available.

Burning time : Not applicable.

Section 9. Physical and chemical properties

Burning rate : Not applicable.

Decomposition temperature : Not available.

Evaporation rate : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.02

Solubility(ies)		Media	Result
		cold water	Not soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): >21 mm²/s

Section 10. Stability and reactivity

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

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
Propylidynetrimethanol, propoxylated, reaction products with ammonia	LD50 Dermal	Rabbit	0.4 g/kg	-
	LD50 Oral	Rat	0.22 g/kg	-
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-
Isobutyl Alcohol	LC50 Inhalation Vapor	Rat	24.6 mg/l	4 hours
	LD50 Dermal	Rabbit	2460 mg/kg	-
	LD50 Oral	Rat	2830 mg/kg	-
bisphenol A	LD50 Dermal	Rabbit	3600 mg/kg	-
	LD50 Oral	Rat	3.25 g/kg	-
m-Xylenediamine	LC50 Inhalation Gas.	Rat	700 ppm	1 hours
	LD50 Dermal	Rat - Male, Female	>3100 mg/kg	-
	LD50 Oral	Rat	930 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	-
2,4,6-Tris[(dimethylamino) methyl]phenol	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
m-Xylenediamine	Skin - Severe irritant	Rat	-	4 hours	4 hours

Sensitization

Product/ingredient name	Route of exposure	Species	Result
m-Xylenediamine	skin	Mouse	Sensitizing

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Section 11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Isobutyl Alcohol	Category 3	-	Respiratory tract irritation
bisphenol A	Category 3	-	Respiratory tract irritation
m-Xylenediamine	Category 1	-	-

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Xylene	Category 1	-	-
m-Xylenediamine	Category 1	-	-
ethylbenzene	Category 2	-	hearing organs

Aspiration hazard

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

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : Harmful if inhaled.

Ingestion : Harmful if swallowed. May cause damage to organs following a single exposure if swallowed.

Skin contact : Causes severe burns. Harmful in contact with skin. May cause damage to organs following a single exposure in contact with skin. Defatting to the skin. May cause an allergic skin reaction.

Eye contact : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Eyes : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

Skin : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility or the unborn child.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Eye contact : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SIGMASHIELD 420/460/880/880GF HARDENER	1185.4	1690.9	4076.7	33.9	10.6
Xylene	4300	1700	N/A	N/A	N/A
Propylidynetrimethanol, propoxylated, reaction products with ammonia	500	1100	N/A	N/A	N/A
benzyl alcohol	1200	2500	N/A	N/A	N/A
Isobutyl Alcohol	2830	2460	N/A	11	N/A
bisphenol A	3250	3600	N/A	N/A	N/A
m-Xylenediamine	930	1100	700	N/A	N/A
ethylbenzene	3500	17800	N/A	17.8	1.5
2,4,6-Tris[(dimethylamino)methyl]phenol	1200	1280	N/A	N/A	N/A

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. Avoid contact with skin and clothing. Exposure to amine vapor has been reported to cause transient corneal edema described as blue haze, halo effect, foggy or blurred vision for several hours. This condition is typically temporary and does not cause permanent visual effects. When the proper eye protection specified in Section 8 is worn, exposure is significantly reduced and the condition has not been observed.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Isobutyl Alcohol	Acute EC50 1100 mg/l	Daphnia	48 hours
bisphenol A	Acute EC50 1.32 mg/l	Algae - <i>Raphidocelis subcapitata</i>	72 hours
	Acute LC50 0.885 mg/l Fresh water	Crustaceans	48 hours
	Acute LC50 8.11 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 4.6 mg/l Fresh water	Fish	96 hours
	Chronic EC10 1189 µg/l	Algae - <i>Raphidocelis subcapitata</i>	72 hours
	Chronic NOEC 0.000174 mg/l Fresh water	Fish	5 months
ethylbenzene	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Chronic NOEC 1 mg/l Fresh water	Daphnia - <i>Ceriodaphnia dubia</i>	-
2,4,6-Tris[(dimethylamino)methyl]phenol	Acute LC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours

Persistence and degradability

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Product/ingredient name	Test	Result	Dose	Inoculum
ethylbenzene 2,4,6-Tris[(dimethylamino) methyl]phenol	- OECD Ready Biodegradability - Closed Bottle Test	79 % - Readily - 10 days 4 % - Not readily - 28 days	- -	- -

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Xylene benzyl alcohol bisphenol A ethylbenzene 2,4,6-Tris[(dimethylamino) methyl]phenol	- - - - -	- - - - -	Readily Readily Readily Readily Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Xylene	3.12	7.4 to 18.5	Low
Propylidynetrimethanol, propoxylated, reaction products with ammonia	-1.13	-	Low
benzyl alcohol	0.87	-	Low
Isobutyl Alcohol	1	-	Low
bisphenol A	3.4	43.65	Low
m-Xylenediamine	0.18	2.69	Low
ethylbenzene	3.6	79.43	Low
2,4,6-Tris[(dimethylamino) methyl]phenol	0.219	-	Low

Mobility in soilSoil/Water partition
coefficient : 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

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Section 13. Disposal considerations

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	UN3469	UN3469	UN3469
UN proper shipping name	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE
Transport hazard class(es)	3 (8)	3 (8)	3 (8)
Packing group	III	III	III
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.**IATA** : 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 to IMO instruments : Not applicable.

Section 15. Regulatory information

TCCSCA List of toxic chemicals

Not applicable.

TCCSCA List of concerned chemicals

Not applicable.

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Section 15. Regulatory information

List of chemicals for which manufacturing or handling is defined as "work specially hazardous to health" : This product contains substances "Specially hazardous to health": xylene, 2-methylpropan-1-ol, toluene.

Regulations Applicable:

1. Rules for Occupational Safety and Health Facilities
2. Regulations for the Labeling and Hazard Communication of Hazardous Chemicals
3. Prevention Rules for Organic Solvent Intoxication/Poisoning
4. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace
5. Traffic Safety Regulation of Road
6. Regulation for Governing, Designating and Handling of Priority Management Chemicals

Section 16. Other information

References	Not available.	
Organization that prepared the SDS	Name: PPG Industries International Inc., Taiwan Branch	
	Address / Telephone : No. 209, Hong Tzuenn Rd. Ping Chen City, Taoyuan County, Taiwan +886-3-3663922 +886-911998320	
Person who prepared the SDS	Title: Technical manager	Name: (Signature): Tony Cheng
Date of issue	25 September 2025	

Date of previous issue : 5/16/2025

Version : 5

Indicates information that has changed from previously issued version.

Remarks : New SDS layout incorporating TW Table 2017

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

Product code 000001189162

Date of issue 25 September
2025

Version 5

Product name SIGMASHIELD 420/460/880/880GF HARDENER

Section 16. Other information

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.