Safety Data Sheet

Date of issue 29 October 2026
Version 13.08

Section 1. Product and company identification

Product name : SIGMASHIELD 220/420/460/880/880GF HARDENER
Product code : 00190962
Other means of identification : Not available.
Product type : Liquid.

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

Identified uses
Coating. Paints. Painting-related materials.

Uses advised against	**Reason**
Not applicable.	

Supplier's details:

Supplier : PPG Industrial do Brasil – Tintas e Vernizes Ltda
Via Anhanguera KM 106, Bairro Sao Judas Tadeu
Sumare / SP, Brasil
55 19 2103-6000 (Recepção e Portaria)

Email address: : fds@ppg.com

Emergency telephone number : 0800 707 1767 / 0800 707 7022 – Empresa Ambipar response (24hs)
0800 014 8110 / (011)2661-8571 – CEATOX - Centro de Assistência Toxicológica (atendimento 24hs)

Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1C
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 1

Section 2. Hazards identification

Target organs : Contains material which causes damage to the following organs: blood, liver, heart, brain.
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), ears, eye, lens or cornea.

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: 56.7%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 43.7%

GHS label elements

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 cause respiratory irritation.
Suspected of causing cancer.
May damage fertility or the unborn child.
Toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood. 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. Avoid release to the environment. Avoid breathing vapor. Wash thoroughly after handling.

Response : Collect spillage. IF exposed or concerned: Get medical advice or attention. IF INHALED: 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. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store in a well-ventilated place. Keep container tightly closed.

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

Section 2. Hazards identification

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

Other means of identification : Not available.

Ingredient name	%	CAS number/other identifiers	Classification
Epoxy Amine Resin	≥30 - ≤60	SUB123903	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
xylene	≥10 - ≤20	1330-20-7	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3
Propylidynetrimethanol, propoxylated, reaction products with ammonia	≥10 - ≤20	39423-51-3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 SERIOUS EYE DAMAGE - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2
benzyl alcohol	≥10 - ≤18	100-51-6	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 5 EYE IRRITATION - Category 2A ASPIRATION HAZARD - Category 2
2-methylpropan-1-ol	≥5 - ≤10	78-83-1	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (dermal) - Category 5 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

Section 3. Composition/information on ingredients

			(Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 2
bisphenol A	≥3 - ≤5	80-05-7	ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (dermal) - Category 5 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1B TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1
m-phenylenebis(methylamine)	≥3 - <5	1477-55-0	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 5 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1B AQUATIC HAZARD (LONG-TERM) - Category 3
ethylbenzene	≥1 - ≤3.8	100-41-4	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (ACUTE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 3
2,4,6-tris(dimethylaminomethyl) phenol	≥1 - ≤3	90-72-2	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category

Section 3. Composition/information on ingredients

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There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SUB codes represent substances without registered CAS Numbers.

Section 4. First aid measures

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.

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.

Specific treatments : The exposed person may need to be kept under medical surveillance for 48 hours. 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.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes severe burns. Harmful in contact with skin. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed.

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.

Section 5. Fire-fighting measures

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

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. Put on appropriate personal protective equipment. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment 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 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. 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.

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
xylene	**Ministry of Labor and Employment (Brazil, 11/2001) [Xylenes (o-, m-, p- isomers)]** TWA 8 hours: 78 ppm. TWA 8 hours: 340 mg/m³.
2-methylpropan-1-ol	**Ministry of Labor and Employment (Brazil, 11/2001)** TWA 8 hours: 40 ppm. TWA 8 hours: 115 mg/m³.
m-phenylenebis(methylamine)	**ACGIH TLV (United States, 1/2026)** Absorbed through skin. C: 0.018 ppm.
ethylbenzene	**Ministry of Labor and Employment (Brazil, 11/2001)** TWA 8 hours: 78 ppm. TWA 8 hours: 340 mg/m³.

Section 8. Exposure controls/personal protection

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 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 protection : Chemical splash goggles and face shield.

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. 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

Appearance

Physical state : Liquid.

Color : Various [Light]

Odor : Amine-like.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Section 9. Physical and chemical properties

Flash point : Closed cup: 36°C (96.8°F)

Evaporation rate : Not available.

Flammability (solid, gas) : 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 : 305°C (581°F)

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): >21 mm^2/s (>21 cSt)

Viscosity : > 100 s (ISO 6mm)

Particle characteristics

Median particle size : 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

Section 11. Toxicological information

Information on toxicological effects

Section 11. Toxicological information

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.
Suspected of causing cancer.
May cause respiratory irritation.

Acute toxicity

Product/ingredient name	Result	Dose
Epoxy Amine Resin	Not available	Not available
xylene	Rat - Oral - LD50	4.3 g/kg
	Rabbit - Dermal - LD50	1.7 g/kg
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Rat - Oral - LD50	0.22 g/kg
	Rabbit - Dermal - LD50	0.4 g/kg
benzyl alcohol	Rabbit - Dermal - LD50	>2000 mg/kg
	Rat - Oral - LD50	1200 mg/kg
	Rat - Inhalation - LC50 Dusts and mists	>5 mg/l [4 hours]
2-methylpropan-1-ol	Rat - Oral - LD50	2830 mg/kg
	Rabbit - Dermal - LD50	2460 mg/kg
	Rat - Inhalation - LC50 Vapor	24.6 mg/l [4 hours]
bisphenol A	Rat - Oral - LD50	3.25 g/kg
	Rabbit - Dermal - LD50	3600 mg/kg
m-phenylenebis(methylamine)	Rat - Oral - LD50	930 mg/kg
	Rat - Male, Female - Dermal - LD50	>3100 mg/kg
	Rat - Inhalation - LC50 Gas.	700 ppm [1 hours]
ethylbenzene	Rat - Oral - LD50	3.5 g/kg
	Rabbit - Dermal - LD50	17.8 g/kg
	Rat - Inhalation - LC50 Vapor	17.8 mg/l [4 hours]
2,4,6-tris(dimethylaminomethyl)phenol	Rat - Dermal - LD50	1280 mg/kg
	Rat - Oral - LD50	1200 mg/kg

Conclusion/Summary : Harmful if swallowed, in contact with skin or if inhaled.

Irritation/Corrosion

Product/ingredient name	Species	Dose	Score
Epoxy Amine Resin	Not available	Not available	Not available
xylene	Rabbit - Skin - Moderate irritant	Amount/concentration applied: 500 mg Duration of treatment/exposure: 24 hours	-
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Not available	Not available	Not available
benzyl alcohol	Not available	Not available	Not available
2-methylpropan-1-ol	Not available	Not available	Not available
bisphenol A	Not available	Not available	Not available
m-phenylenebis (methylamine)	Rat - Skin - Severe irritant	Duration of treatment/exposure: 4 hours Observation period: 4 hours	-
ethylbenzene	Not available	Not available	Not available
2,4,6-tris	Not available	Not available	Not available

Section 11. Toxicological information

(dimethylaminomethyl) phenol			

Conclusion/Summary

Skin : Causes severe burns.

Eyes : Causes serious eye damage.

Respiratory : Based on available data, the classification criteria are not met.

Sensitization

Product/ingredient name	Species	Result
Epoxy Amine Resin	Not available	Not available
xylene	Not available	Not available
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Not available	Not available
benzyl alcohol	Not available	Not available
2-methylpropan-1-ol	Not available	Not available
bisphenol A	Not available	Not available
m-phenylenebis(methylamine)	Mouse - skin OECD 429	Sensitizing
ethylbenzene	Not available	Not available
2,4,6-tris(dimethylaminomethyl)phenol	Not available	Not available

Conclusion/Summary

Skin : May cause an allergic skin reaction.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Species	Result
Epoxy Amine Resin	Not available	Not available
xylene	Not available	Not available
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Not available	Not available
benzyl alcohol	Not available	Not available
2-methylpropan-1-ol	Not available	Not available
bisphenol A	Not available	Not available
m-phenylenebis(methylamine)	Not available	Not available
ethylbenzene	Not available	Not available
2,4,6-tris(dimethylaminomethyl)phenol	Not available	Not available

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Species	Result
Epoxy Amine Resin	Not available	Not available
xylene	Not available	Not available
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Not available	Not available
benzyl alcohol	Not available	Not available
2-methylpropan-1-ol	Not available	Not available
bisphenol A	Not available	Not available
m-phenylenebis(methylamine)	Not available	Not available

Section 11. Toxicological information

ethylbenzene	Not available	Not available
2,4,6-tris(dimethylaminomethyl)phenol	Not available	Not available

Conclusion/Summary : Suspected of causing cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP
xylene	-	3	-
ethylbenzene	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Product/ingredient name	Species	Result
Epoxy Amine Resin	Not available	Not available
xylene	Not available	Not available
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Not available	Not available
benzyl alcohol	Not available	Not available
2-methylpropan-1-ol	Not available	Not available
bisphenol A	Not available	Not available
m-phenylenebis(methylamine)	Not available	Not available
ethylbenzene	Not available	Not available
2,4,6-tris(dimethylaminomethyl)phenol	Not available	Not available

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Epoxy Amine Resin	None.	None.	None.
xylene	Category 3	-	Respiratory tract irritation
Propylidynetrimethanol, propoxylated, reaction products with ammonia	None.	None.	None.
benzyl alcohol	None.	None.	None.
2-methylpropan-1-ol	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
bisphenol A	Category 3	-	Respiratory tract irritation
m-phenylenebis(methylamine)	None.	None.	None.
ethylbenzene	None.	None.	None.
2,4,6-tris(dimethylaminomethyl)phenol	None.	None.	None.

Conclusion/Summary : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Epoxy Amine Resin	None.	None.	None.
xylene	None.	None.	None.
Propylidynetrimethanol, propoxylated, reaction products with ammonia	None.	None.	None.
benzyl alcohol	None.	None.	None.
2-methylpropan-1-ol	None.	None.	None.
bisphenol A	None.	None.	None.
m-phenylenebis(methylamine)	None.	None.	None.
ethylbenzene	Category 2	-	hearing organs
2,4,6-tris(dimethylaminomethyl)phenol	None.	None.	None.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Target organs : Contains material which causes damage to the following organs: blood, liver, heart, brain.
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), ears, eye, lens or cornea.

Aspiration hazard

Name	Result
Epoxy Amine Resin	None.
xylene	ASPIRATION HAZARD - Category 1
xylene	None.
Propylidynetrimethanol, propoxylated, reaction products with ammonia	None.
benzyl alcohol	ASPIRATION HAZARD - Category 2
benzyl alcohol	None.
2-methylpropan-1-ol	ASPIRATION HAZARD - Category 2
2-methylpropan-1-ol	None.
bisphenol A	None.
m-phenylenebis(methylamine)	None.
ethylbenzene	ASPIRATION HAZARD - Category 1
ethylbenzene	None.
2,4,6-tris(dimethylaminomethyl)phenol	None.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes severe burns. Harmful in contact with skin. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
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

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

Conclusion/Summary : There are no data available on the mixture itself. 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. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. 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. 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.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Section 11. Toxicological information

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

Product/ingredient name	Result
Epoxy Amine Resin	Not available
xylene	Not available
Propylidynetrimethanol, propoxylated, reaction products with ammonia	Not available
benzyl alcohol	Not available
2-methylpropan-1-ol	Not available
bisphenol A	Not available
m-phenylenebis(methylamine)	Not available
ethylbenzene	Not available
2,4,6-tris(dimethylaminomethyl)phenol	Not available

General : 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 : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SIGMASHIELD 220/420/460/880/880GF HARDENER	1184.8	1785.4	47179.2	22.4	2.9
Epoxy Amine Resin	Not available	Not available	Not available	Not available	Not available
xylene	4300	1700	Not available	11	1.5
Propylidynetrimethanol, propoxylated, reaction products with ammonia	500	1100	Not available	Not available	Not available
benzyl alcohol	1200	2500	Not available	Not available	Not available
2-methylpropan-1-ol	2830	2460	Not available	24.6	Not available
bisphenol A	3250	3600	Not available	Not available	Not available
m-phenylenebis(methylamine)	930	2500	4500	Not available	Not available
ethylbenzene	3500	17800	Not available	17.8	1.5
2,4,6-tris(dimethylaminomethyl)phenol	1200	1280	Not available	Not available	Not available

Other information : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Dose / Exposure
2-methylpropan-1-ol	Acute - EC50	Daphnia	1100 mg/l [48 hours]
bisphenol A	Acute - LC50 - Fresh water	Fish	4.6 mg/l [96 hours]
	Acute - LC50 - Fresh water	Crustaceans	0.885 mg/l [48 hours]
	Chronic - NOEC - Fresh water	Fish	0.000174 mg/l [5 months]
	Acute - EC50	Algae - Green algae - *Raphidocelis subcapitata*	1.32 mg/l [72 hours]
	Chronic - EC10	Algae - Green algae - *Raphidocelis subcapitata*	1.189 mg/l [72 hours]
ethylbenzene	Acute - EC50 - Fresh water	Daphnia	1.8 mg/l [48 hours]
	Chronic - NOEC - Fresh water	Daphnia - *Ceriodaphnia dubia*	1 mg/l
2,4,6-tris (dimethylaminomethyl)phenol	Acute - LC50	Daphnia	>100 mg/l [48 hours]
	Acute - LC50	Fish	>100 mg/l [96 hours]

Conclusion/Summary : Not available.

Persistence/degradability

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

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
benzyl alcohol	-	-	Readily
bisphenol A	-	-	Readily
ethylbenzene	-	-	Readily
2,4,6-tris (dimethylaminomethyl) phenol	-	-	Not readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Epoxy Amine Resin	None.	None.	None.
xylene	3.12	7.4 to 18.5	Low
Propylidynetrimethanol, propoxylated, reaction products with ammonia	-1.13	None.	Low
benzyl alcohol	0.87	None.	Low
2-methylpropan-1-ol	1	None.	Low
bisphenol A	3.4	43.65	Low
m-phenylenebis (methylamine)	0.18	2.69	Low
ethylbenzene	3.6	79.43	Low
2,4,6-tris (dimethylaminomethyl) phenol	0.219	None.	Low

Mobility in soil

Soil/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 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

Section 14. Transport information

	Brazil (ANTT)	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

Brazil : None identified.

Risk number : 38

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

References : ABNT NBR 14725: 2023 (April 2025)

Section 16. Other information

History

Date of previous issue : **7/3/2025**

Version : **13.08**

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

Section 16. Other information

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.

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.