



Date of issue 3 July 2025  
Version 3.04

## Section 1. Product and company identification

Product name : SIGMASHIELD 220/420/460/880/880GF HARDENER  
Product code : 000001011248  
Other means of identification : 00190962; 00191019  
Product type : Liquid.

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

|                                                                        |               |
|------------------------------------------------------------------------|---------------|
| <b>Identified uses</b><br>Coating. Paints. Painting-related materials. |               |
| <b>Uses advised against</b>                                            | <b>Reason</b> |
| 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 : 00190962; 00191019

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

## Section 3. Composition/information on ingredients

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

## Section 3. Composition/information on ingredients

|  |  |  |   |
|--|--|--|---|
|  |  |  | 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.

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<sub>2</sub>, 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>xylene</div> <div>2-methylpropan-1-ol</div> <div>m-phenylenebis(methylamine)</div> <div>ethylbenzene</div> | <div> <b>Ministry of Labor and Employment (Brazil, 11/2001) [Xylenes (o-, m-, p- isomers)]</b><br/> TWA 8 hours: 78 ppm.<br/> TWA 8 hours: 340 mg/m³. </div> <div> <b>Ministry of Labor and Employment (Brazil, 11/2001)</b><br/> TWA 8 hours: 40 ppm.<br/> TWA 8 hours: 115 mg/m³. </div> <div> <b>ACGIH TLV (United States, 1/2024)</b><br/> Absorbed through skin.<br/> C: 0.018 ppm. </div> <div> <b>Ministry of Labor and Employment (Brazil, 11/2001)</b><br/> TWA 8 hours: 78 ppm.<br/> TWA 8 hours: 340 mg/m³. </div> |

## 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** : Colorless. [Light]
- Odor** : Amine-like.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)

## Section 9. Physical and chemical properties

| <b>Flash point</b>                                  | : Closed cup: 36°C (96.8°F)                                                                                                                                |       |        |            |             |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|------------|-------------|
| <b>Evaporation rate</b>                             | : Not available.                                                                                                                                           |       |        |            |             |
| <b>Flammability (solid, gas)</b>                    | : Not available.                                                                                                                                           |       |        |            |             |
| <b>Lower and upper explosive (flammable) limits</b> | : Not available.                                                                                                                                           |       |        |            |             |
| <b>Vapor pressure</b>                               | : Not available.                                                                                                                                           |       |        |            |             |
| <b>Vapor density</b>                                | : Not available.                                                                                                                                           |       |        |            |             |
| <b>Relative density</b>                             | : 1.02                                                                                                                                                     |       |        |            |             |
| <b>Solubility(ies)</b>                              | <table> <tr> <th>Media</th><th>Result</th></tr> <tr> <td>cold water</td><td>Not soluble</td></tr> </table>                                                 | Media | Result | cold water | Not soluble |
| Media                                               | Result                                                                                                                                                     |       |        |            |             |
| cold water                                          | Not soluble                                                                                                                                                |       |        |            |             |
| <b>Partition coefficient: n-octanol/water</b>       | : Not applicable.                                                                                                                                          |       |        |            |             |
| <b>Auto-ignition temperature</b>                    | : 305°C (581°F)                                                                                                                                            |       |        |            |             |
| <b>Decomposition temperature</b>                    | : Not available.                                                                                                                                           |       |        |            |             |
| <b>Viscosity</b>                                    | : Dynamic (room temperature): Not available.<br>Kinematic (room temperature): Not available.<br>Kinematic (40°C (104°F)): >21 mm <sup>2</sup> /s (>21 cSt) |       |        |            |             |
| <b>Viscosity</b>                                    | : > 100 s (ISO 6mm)                                                                                                                                        |       |        |            |             |
| <b>Particle characteristics</b>                     |                                                                                                                                                            |       |        |            |             |
| <b>Median particle size</b>                         | : Not applicable.                                                                                                                                          |       |        |            |             |

## Section 10. Stability and reactivity

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

## Section 11. Toxicological information

### Information on toxicological effects

This section contains information about toxicological effects and routes of exposure for the substances or mixtures that have these data or information available. There might be substances listed in section 3 of this SDS that will not have the information available.

## 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                |
|-------------------------------------------------------------------------------------|-----------------------------------------|---------------------|
| ☑ xylene                                                                            | Rat - Oral - LD50                       | 4.3 g/kg            |
|                                                                                     | Rabbit - Dermal - LD50                  | 1.7 g/kg            |
| Propylidynetrime <span>thanol</span> , propoxylated, reaction products with ammonia | Rat - Oral - LD50                       | 0.22 g/kg           |
| benzyl alcohol                                                                      | Rabbit - Dermal - LD50                  | 0.4 g/kg            |
|                                                                                     | 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           |
| m-phenylenebis(methylamine)                                                         | Rabbit - Dermal - LD50                  | 3600 mg/kg          |
|                                                                                     | 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 |
|-----------------------------|-----------------------------------|----------------------------------------------------------------------------------|-------|
| ☑ xylene                    | Rabbit - Skin - Moderate irritant | Amount/concentration applied: 500 mg<br>Duration of treatment/exposure: 24 hours | -     |
| m-phenylenebis(methylamine) | Rat - Skin - Severe irritant      | Duration of treatment/exposure: 4 hours<br>Observation period: 4 hours           | -     |

### Conclusion/Summary

**Skin** : ☑ Causes severe burns.  
**Eyes** : ☑ Causes serious eye damage.  
**Respiratory** : ☑ Based on available data, the classification criteria are not met.

### Sensitization

## Section 11. Toxicological information

| Product/ingredient name     | Species                  | Result              |
|-----------------------------|--------------------------|---------------------|
| m-phenylenebis(methylamine) | Mouse - skin<br>OECD 429 | Result: Sensitizing |

### Conclusion/Summary

**Skin** : May cause an allergic skin reaction.

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

### Mutagenicity

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

### Carcinogenicity

**Conclusion/Summary** : Suspected of causing cancer.

#### Classification

| Product/ingredient name | OSHA | IARC | NTP |
|-------------------------|------|------|-----|
| m-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

**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                |
|---------------------|------------|-------------------|------------------------------|
| m-xylene            | Category 3 | -                 | Respiratory tract irritation |
| 2-methylpropan-1-ol | Category 3 | -                 | Respiratory tract irritation |
| -                   | Category 3 | -                 | Narcotic effects             |
| bisphenol A         | Category 3 | -                 | Respiratory tract irritation |

**Conclusion/Summary** : May cause respiratory irritation.

### Specific target organ toxicity (repeated exposure)

| Name         | Category   | Route of exposure | Target organs  |
|--------------|------------|-------------------|----------------|
| ethylbenzene | Category 2 | -                 | hearing organs |

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

## Section 11. Toxicological information

**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                         |
|---------------------|--------------------------------|
| xylene              | ASPIRATION HAZARD - Category 1 |
| benzyl alcohol      | ASPIRATION HAZARD - Category 2 |
| 2-methylpropan-1-ol | ASPIRATION HAZARD - Category 2 |
| ethylbenzene        | ASPIRATION HAZARD - Category 1 |

**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

**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

## Section 11. Toxicological information

### 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.

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

#### Potential chronic health effects

**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) |
|-------------------------|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
|                         |              |                |                          |                            |                                     |

## Section 11. Toxicological information

|                                                                      |        |        |         |      |     |
|----------------------------------------------------------------------|--------|--------|---------|------|-----|
| SIGMASHIELD 220/420/460/880/880GF<br>HARDENER                        | 1185.4 | 1786.2 | 47128.1 | 22.3 | 2.9 |
| xylene                                                               | 4300   | 1700   | N/A     | 11   | 1.5 |
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | 500    | 1100   | N/A     | N/A  | N/A |
| benzyl alcohol                                                       | 1200   | 2500   | N/A     | N/A  | N/A |
| 2-methylpropan-1-ol                                                  | 2830   | 2460   | N/A     | 24.6 | N/A |
| bisphenol A                                                          | 3250   | 3600   | N/A     | N/A  | N/A |
| m-phenylenebis(methylamine)                                          | 930    | 2500   | 4500    | N/A  | N/A |
| ethylbenzene                                                         | 3500   | 17800  | N/A     | 17.8 | 1.5 |
| 2,4,6-tris(dimethylaminomethyl)phenol                                | 1200   | 1280   | N/A     | N/A  | N/A |

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 - <i>Raphidocelis subcapitata</i> | 1.32 mg/l [72 hours]     |
|                                       | Chronic - EC10               | Algae - Green algae - <i>Raphidocelis subcapitata</i> | 1189 µg/l [72 hours]     |
| ethylbenzene                          | Acute - EC50 - Fresh water   | Daphnia                                               | 1.8 mg/l [48 hours]      |
|                                       | Chronic - NOEC - Fresh water | Daphnia - <i>Ceriodaphnia dubia</i>                   | 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.

## Section 12. Ecological information

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

### Bioaccumulative potential

| Product/ingredient name                                                    | LogP <sub>ow</sub> | BCF         | Potential |
|----------------------------------------------------------------------------|--------------------|-------------|-----------|
| xylene                                                                     | 3.12               | 7.4 to 18.5 | Low       |
| Propylidynetrimethanol,<br>propoxylated, reaction<br>products with ammonia | -1.13              | -           | Low       |
| benzyl alcohol                                                             | 0.87               | -           | Low       |
| 2-methylpropan-1-ol                                                        | 1                  | -           | Low       |
| bisphenol A                                                                | 3.4                | 43.65       | Low       |
| m-phenylenebis<br>(methylamine)                                            | 0.18               | 2.69        | Low       |
| ethylbenzene                                                               | 3.6                | 79.43       | Low       |
| 2,4,6-tris<br>(dimethylaminomethyl)                                        | 0.219              | -           | Low       |
| phenol                                                                     |                    |             |           |

### 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

|                             | 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

: 10/9/2024
- Version

: 3.04
- 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

## Section 16. Other information

IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
UN = United Nations

 Indicates information that has changed from previously issued version.

### Disclaimer

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