



Date of issue

3 July 2025

Version 1.03

## Section 1. Product and company identification

**Product name** : SIGMASHIELD 880 MARINE BASE BLACK  
**Product code** : 000001196454  
**Other means of identification** : 00470222  
**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><br>Not applicable.                         | <b>Reason</b> |

### 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 (dermal) - Category 5  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN IRRITATION - Category 2  
SERIOUS EYE DAMAGE - Category 1  
SKIN SENSITIZATION - Category 1  
GERM CELL MUTAGENICITY - Category 2  
CARCINOGENICITY - Category 1A  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
AQUATIC HAZARD (ACUTE) - Category 3  
AQUATIC HAZARD (LONG-TERM) - Category 3

## Section 2. Hazards identification

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

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 54.2%

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 82.7%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 55.8%

### GHS label elements

#### Hazard pictograms



#### Signal word

: Danger

#### Hazard statements

: Flammable liquid and vapor.  
May be harmful in contact with skin.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
Harmful if inhaled.  
May cause respiratory irritation.  
Suspected of causing genetic defects.  
May cause cancer.  
May cause damage to organs through prolonged or repeated exposure.  
Harmful 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. Do not breathe vapor. Wash thoroughly after handling.

#### Response

: IF exposed or concerned: Get medical advice or attention. IF INHALED: Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it 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.

#### 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** : 00470222

| Ingredient name                                         | %         | CAS number/other identifiers | Classification                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------|-----------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| crystalline silica, non-respirable powder (>10 microns) | ≥20 - ≤30 | 14808-60-7                   | CARCINOGENICITY - Category 1A                                                                                                                                                                                                                                                                                                                                                                         |
| bis-[4-(2,3-epoxipropoxy)phenyl] propane                | ≥10 - ≤21 | 1675-54-3                    | SKIN IRRITATION - Category 2<br>EYE IRRITATION - Category 2A<br>SKIN SENSITIZATION - Category 1B<br>AQUATIC HAZARD (ACUTE) - Category 2<br>AQUATIC HAZARD (LONG-TERM) - Category 2                                                                                                                                                                                                                    |
| Talc , not containing asbestiform fibres                | ≥10 - ≤20 | 14807-96-6                   | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3                                                                                                                                                                                                                                                                                                          |
| xylene                                                  | ≥5 - ≤8.5 | 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 |
| Epoxy Resin (700<MW≤1100)                               | ≥3 - ≤5   | 25036-25-3                   | ACUTE TOXICITY (oral) - Category 5<br>ACUTE TOXICITY (dermal) - Category 5<br>SKIN IRRITATION - Category 2<br>EYE IRRITATION - Category 2A<br>SKIN SENSITIZATION - Category 1B                                                                                                                                                                                                                        |
| Phenol, methylstyrenated                                | ≥3 - ≤5   | 68512-30-1                   | ACUTE TOXICITY (oral) - Category 5<br>ACUTE TOXICITY (dermal) - Category 5<br>SKIN IRRITATION - Category 2<br>SKIN SENSITIZATION - Category 1B<br>AQUATIC HAZARD (LONG-TERM) - Category 3                                                                                                                                                                                                             |

### Section 3. Composition/information on ingredients

|                                                                                                       |         |             |                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-methylpropan-1-ol                                                                                   | ≥3 - ≤5 | 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) (Respiratory tract irritation) - Category 3<br>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3<br>ASPIRATION HAZARD - Category 2 |
| crystalline silica, respirable powder (<10 microns)                                                   | ≥1 - ≤3 | 14808-60-7  | CARCINOGENICITY - Category 1A<br>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1                                                                                                                                                                                                                                                                                                      |
| 2,3-epoxypropyl neodecanoate                                                                          | ≤2      | 26761-45-5  | ACUTE TOXICITY (dermal) - Category 5<br>SKIN SENSITIZATION - Category 1<br>GERM CELL MUTAGENICITY - Category 2<br>AQUATIC HAZARD (ACUTE) - Category 2<br>AQUATIC HAZARD (LONG-TERM) - Category 2                                                                                                                                                                                                      |
| ethylbenzene                                                                                          | ≤1.2    | 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                                                               |
| Reaction products of 12-hydroxyoctadecanoic acid and octadecanoic acid and 1,3-phenylenedimethanamine | ≥1 - ≤3 | 911674-82-3 | SKIN SENSITIZATION - Category 1B                                                                                                                                                                                                                                                                                                                                                                      |

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.

## Section 3. Composition/information on ingredients

SUB codes represent substances without registered CAS Numbers.

## Section 4. First aid measures

### Description of necessary first aid measures

- |                     |                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : 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.                            |
| <b>Inhalation</b>   | : 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. |
| <b>Skin contact</b> | : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.                                             |
| <b>Ingestion</b>    | : 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

- |                                   |                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Notes to physician</b>         | : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.                                                                                                                                                                                                                                                                         |
| <b>Specific treatments</b>        | : No specific treatment.                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Protection of first-aiders</b> | : 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

- |                     |                                                                                                                            |
|---------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Causes serious eye damage.                                                                                               |
| <b>Inhalation</b>   | : Harmful if inhaled. May cause respiratory irritation.                                                                    |
| <b>Skin contact</b> | : May be harmful in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards.                                                                        |

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.

**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 harmful 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  
metal oxide/oxides

## Section 5. Fire-fighting measures

- 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.

### 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. 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

## Section 7. Handling and storage

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                                                                                                                             |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| crystalline silica, non-respirable powder (>10 microns)                                               | <b>ACGIH TLV (United States, 1/2024) [Silica, crystalline]</b><br>TWA 8 hours: 0.025 mg/m³. Form: Respirable fraction.                      |
| Talc , not containing asbestiform fibres                                                              | <b>ACGIH TLV (United States, 1/2024)</b><br>TWA 8 hours: 2 mg/m³. Form: Respirable fraction.                                                |
| xylene                                                                                                | <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. |
| 2-methylpropan-1-ol                                                                                   | <b>Ministry of Labor and Employment (Brazil, 11/2001)</b><br>TWA 8 hours: 40 ppm.<br>TWA 8 hours: 115 mg/m³.                                |
| crystalline silica, respirable powder (<10 microns)                                                   | <b>ACGIH TLV (United States, 1/2024) [Silica, crystalline]</b><br>TWA 8 hours: 0.025 mg/m³. Form: Respirable fraction.                      |
| ethylbenzene                                                                                          | <b>Ministry of Labor and Employment (Brazil, 11/2001)</b><br>TWA 8 hours: 78 ppm.<br>TWA 8 hours: 340 mg/m³.                                |
| Reaction products of 12-hydroxyoctadecanoic acid and octadecanoic acid and 1,3-phenylenedimethanamine | <b>ACGIH TLV (United States)</b><br>TWA: 3 mg/m³ (Respirable fraction).                                                                     |



## Section 8. Exposure controls/personal protection

TWA: 10 mg/m<sup>3</sup> (Total dust).

- 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** : butyl rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. 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** : Black.

**Odor** : Aromatic.

**pH** : Not applicable.

**Melting point** : Not available.

**Boiling point** : >37.78°C (>100°F)

**Flash point** : Closed cup: 37°C (98.6°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** : 1.54

**Solubility(ies)** :

| Media | Result |
|-------|--------|
|-------|--------|

|            |             |
|------------|-------------|
| cold water | Not soluble |
|------------|-------------|

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

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

**Viscosity** : Dynamic (room temperature): Not available.  
Kinematic (room temperature): >400 mm<sup>2</sup>/s (>400 cSt)  
Kinematic (40°C (104°F)): >21 mm<sup>2</sup>/s (>21 cSt)

**Viscosity** : 60 - 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 metal oxide/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.

-  Harmful if inhaled.
- May be harmful in contact with skin.
- Causes serious eye damage.
- Causes skin irritation.
- May cause an allergic skin reaction.
- May cause cancer.
- Suspected of causing genetic defects.
- May cause respiratory irritation.
- May cause damage to organs through prolonged or repeated exposure.

Acute toxicity

| Product/ingredient name                                                                                                  | Result                                     | Dose                 |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------|
|  bis-[4-(2,3-epoxipropoxi)phenyl]propane | Rabbit - Dermal - LD50                     | 23000 mg/kg          |
| xylene                                                                                                                   | Rat - Oral - LD50                          | 15000 mg/kg          |
|                                                                                                                          | Rat - Oral - LD50                          | 4.3 g/kg             |
|                                                                                                                          | Rabbit - Dermal - LD50                     | 1.7 g/kg             |
| Epoxy Resin (700<MW<=1100)                                                                                               | Rat - Oral - LD50                          | >2000 mg/kg          |
|                                                                                                                          | Rat - Dermal - LD50                        | >2000 mg/kg          |
| Phenol, methylstyrenated                                                                                                 | Rat - Oral - LD50                          | >2000 mg/kg          |
|                                                                                                                          | Rabbit - Dermal - LD50                     | >2000 mg/kg          |
| 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]  |
| 2,3-epoxypropyl neodecanoate                                                                                             | Rat - Oral - LD50                          | 9.6 g/kg             |
|                                                                                                                          | Rat - Dermal - LD50                        | 3800 mg/kg           |
| 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]  |
| Reaction products of<br>12-hydroxyoctadecanoic acid and<br>octadecanoic acid and<br>1,3-phenylenedimethanamine           | Rat - Inhalation - LC50 Dusts and<br>mists | >5.08 mg/l [4 hours] |

Conclusion/Summary

:  Harmful if inhaled.  
May be harmful in contact with skin.

Irritation/Corrosion

| Product/ingredient name                                                                                                    | Species                                     | Dose                                     | Score                 |
|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------|-----------------------|
|  bis-[4-(2,3-epoxipropoxi)phenyl]propane | Rabbit - Eyes - Redness of the conjunctivae | Duration of treatment/exposure: 24 hours | Irritation score: 0.4 |
|                                                                                                                            | Rabbit - Eyes - Mild irritant               | Duration of treatment/exposure: 24 hours | -                     |
|                                                                                                                            |                                             | Fully reversible in 7 days or less       |                       |
|                                                                                                                            | Rabbit - Skin - Erythema/Eschar             | Duration of treatment/exposure: 4 hours  | Irritation score: 0.8 |
|                                                                                                                            | Rabbit - Skin - Edema                       | Duration of treatment/exposure: 4 hours  | Irritation score: 0.5 |
|                                                                                                                            | Rabbit - Skin - Mild irritant               | Duration of treatment/exposure: 4 hours  | -                     |

## Section 11. Toxicological information

|                                            |                                                                       |                                                                                                                              |                                       |
|--------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <div> <div>xylene</div> <div></div> </div> | <div> <div>Rabbit - Skin - Moderate irritant</div> <div></div> </div> | <div> <div>Amount/concentration applied: 500 mg</div> <div>Duration of treatment/exposure: 24 hours</div> <div></div> </div> | <div> <div>-</div> <div></div> </div> |
|--------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|

### Conclusion/Summary

- Skin

: Causes skin irritation.
- Eyes

: Causes serious eye damage.
- Respiratory

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

### Sensitization

| Product/ingredient name                                                     | Species                                          | Result                                                  |
|-----------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------|
| <div> <div>bis-[4-(2,3-epoxipropoxi)phenyl]propane</div> <div></div> </div> | <div> <div>Mouse - skin</div> <div></div> </div> | <div> <div>Result: Sensitizing</div> <div></div> </div> |

### Conclusion/Summary

- Skin

: May cause an allergic skin reaction.
- Respiratory

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

### Mutagenicity

- Conclusion/Summary

: Suspected of causing genetic defects.

### Carcinogenicity

- Conclusion/Summary

: May cause cancer.

### Classification

| Product/ingredient name                                 | OSHA | IARC | NTP                             |
|---------------------------------------------------------|------|------|---------------------------------|
| crystalline silica, non-respirable powder (>10 microns) | +    | 1    | Known to be a human carcinogen. |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane                 | -    | 3    | -                               |
| xylene                                                  | -    | 3    | -                               |
| crystalline silica, respirable powder (<10 microns)     | +    | 1    | Known to be a human carcinogen. |
| ethylbenzene                                            | -    | 2B   | -                               |
| carbon black                                            | -    | 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

: Suspected of causing genetic defects.

### Specific target organ toxicity (single exposure)

## Section 11. Toxicological information

| Name                                     | Category   | Route of exposure | Target organs                |
|------------------------------------------|------------|-------------------|------------------------------|
| Talc , not containing asbestiform fibres | Category 3 | -                 | Respiratory tract irritation |
| xylene                                   | Category 3 | -                 | Respiratory tract irritation |
| 2-methylpropan-1-ol                      | Category 3 | -                 | Respiratory tract irritation |
| -                                        | Category 3 | -                 | Narcotic effects             |

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

### Specific target organ toxicity (repeated exposure)

| Name                                                | Category   | Route of exposure | Target organs  |
|-----------------------------------------------------|------------|-------------------|----------------|
| crystalline silica, respirable powder (<10 microns) | Category 1 | inhalation        | -              |
| ethylbenzene                                        | Category 2 | -                 | hearing organs |

**Conclusion/Summary** : May cause damage to organs through prolonged or repeated exposure.

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

### Aspiration hazard

| Name                | Result                         |
|---------------------|--------------------------------|
| xylene              | ASPIRATION HAZARD - Category 1 |
| 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** : May be harmful in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

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

## Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### 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. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Carbon black is utilized as a raw material in many liquid coating formulations. In this case, the carbon black particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of carbon black when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Most carbon blacks contain trace quantities of polyaromatic hydrocarbons (PAH). PAHs are not expected to be released in biological fluids and are therefore not likely available for biological activity. 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.

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

## Section 11. Toxicological information

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : Suspected of causing genetic defects.

**Reproductive toxicity** : No known significant effects or critical hazards.

### 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 880 MARINE BASE BLACK       | 11399.8      | 4952.1         | N/A                      | 26.4                       | 3.4                                 |
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | 15000        | 23000          | N/A                      | N/A                        | N/A                                 |
| xylene                                  | 4300         | 1700           | N/A                      | 11                         | 1.5                                 |
| Epoxy Resin (700<MW<=1100)              | 2500         | 2500           | N/A                      | N/A                        | N/A                                 |
| Phenol, methylstyrenated                | 2500         | 2500           | N/A                      | N/A                        | N/A                                 |
| 2-methylpropan-1-ol                     | 2830         | 2460           | N/A                      | 24.6                       | N/A                                 |
| 2,3-epoxypropyl neodecanoate            | 9600         | 3800           | N/A                      | N/A                        | N/A                                 |
| ethylbenzene                            | 3500         | 17800          | N/A                      | 17.8                       | 1.5                                 |

**Other information** : Not available.

## Section 12. Ecological information

### Toxicity

| Product/ingredient name                                                                               | Result                       | Species                             | Dose / Exposure      |
|-------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------|----------------------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane                                                               | Chronic - NOEC               | Daphnia                             | 0.3 mg/l [21 days]   |
| 2-methylpropan-1-ol                                                                                   | Acute - LC50 - Fresh water   | Daphnia - <i>daphnia magna</i>      | 1.8 mg/l [48 hours]  |
| 2,3-epoxypropyl neodecanoate                                                                          | Acute - EC50                 | Daphnia                             | 1100 mg/l [48 hours] |
|                                                                                                       | Acute - LC50                 | Fish - <i>Oncorhynchus mykiss</i>   | 9.6 mg/l [96 hours]  |
| ethylbenzene                                                                                          | Acute - EC50                 | Daphnia - <i>Daphnia magna</i>      | 4.8 mg/l [48 hours]  |
|                                                                                                       | Acute - EC50                 | Algae                               | 3.5 mg/l [96 hours]  |
|                                                                                                       | Acute - EC50 - Fresh water   | Daphnia                             | 1.8 mg/l [48 hours]  |
|                                                                                                       | Chronic - NOEC - Fresh water | Daphnia - <i>Ceriodaphnia dubia</i> | 1 mg/l               |
| Reaction products of 12-hydroxyoctadecanoic acid and octadecanoic acid and 1,3-phenylenedimethanamine | 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 |                 |

## Section 12. Ecological information

**Conclusion/Summary** : Not available.

| Product/ingredient name                 | Aquatic half-life | Photolysis | Biodegradability |
|-----------------------------------------|-------------------|------------|------------------|
| bis-[4-(2,3-epoxipropoxy)phenyl]propane | -                 | -          | Not readily      |
| xylene                                  | -                 | -          | Readily          |
| 2,3-epoxypropyl neodecanoate            | -                 | -          | Not readily      |
| ethylbenzene                            | -                 | -          | Readily          |

### Bioaccumulative potential

| Product/ingredient name      | LogP <sub>ow</sub> | BCF         | Potential |
|------------------------------|--------------------|-------------|-----------|
| xylene                       | 3.12               | 7.4 to 18.5 | Low       |
| Phenol, methylstyrenated     | 3.627              | -           | Low       |
| 2-methylpropan-1-ol          | 1                  | -           | Low       |
| 2,3-epoxypropyl neodecanoate | 4.4                | -           | High      |
| ethylbenzene                 | 3.6                | 79.43       | 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

|                             | Brazil (ANTT)   | IMDG            | IATA            |
|-----------------------------|-----------------|-----------------|-----------------|
| UN number                   | UN1263          | UN1263          | UN1263          |
| UN proper shipping name     | PAINT           | PAINT           | PAINT           |
| Transport hazard class(es)  | 3               | 3               | 3               |
| Packing group               | III             | III             | III             |
| Environmental hazards       | No.             | No.             | No.             |
| Marine pollutant substances | Not applicable. | Not applicable. | Not applicable. |

Additional information

Brazil

: None identified.

Risk number

: 30

IMDG

: This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.

IATA

: None identified.

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

: 4/28/2025

Version

: 1.03

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

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