

# SAFETY DATA SHEET



Date of issue/Date of revision

18 November 2019

Version 4

## Section 1. Identification

**Product code** : 00388500  
**Product name** : SIGMASHIELD 880 GF BASE REDBROWN  
**Other means of identification** : Not available.  
**CAS number** : Not applicable.  
**EC number** : Mixture.  
**Product type** : Liquid.

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

**Product use** : Coating. Paint. Painting-related materials.

**Supplier's details** : PPG Yung Chi Coatings Co. Ltd  
Lot 219, Amata Street, Long Binh IZ  
Bien Hoa City, Dong Nai Province  
Vietnam  
Tel : +84 61 3936121/22

**Emergency telephone number (with hours of operation)** : CHEMTREC +(84)-444581938 (CCN 17704)

## 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  
EYE IRRITATION - Category 2A  
SKIN SENSITIZATION - Category 1  
GERM CELL MUTAGENICITY - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
AQUATIC TOXICITY (ACUTE) - Category 3  
AQUATIC TOXICITY (CHRONIC) - Category 3  
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 9.4% (Oral), 40% (Dermal), 81.9% (Inhalation)  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 60.3%

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

## Section 2. Hazards identification

**Hazard statements** : Flammable liquid and vapor.  
Harmful if inhaled.  
May be harmful in contact with skin.  
Causes serious eye irritation.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Suspected of causing genetic defects.  
May cause respiratory irritation.  
May cause damage to organs through prolonged or repeated exposure.  
Harmful to aquatic life with long lasting effects.

### Precautionary statements

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

**Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

**Storage** : Store locked up. Store in a well-ventilated place. Keep cool.

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

**Routes of entry** : Not available.

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

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.  
**EC number** : Mixture.

### Section 3. Composition/information on ingredients

| Ingredient name   | CAS number  | Chemical formula             | %        |
|---|-------------|------------------------------|----------|
| Epoxy resin (MW ≤ 700)  | 25068-38-6  | (C15-H16-O2.<br>C3-H5-Cl-O)x | 20 - <25 |
| barium sulfate  | 7727-43-7   | O4-S.Ba                      | 10 - <20 |
| Talc , not containing asbestiform fibres  | 14807-96-6  | 3Mg-O.4Si-O2.<br>H2-O        | 10 - <20 |
| xylene  | 1330-20-7   | C8-H10                       | 5- <10   |
| Epoxy Resin (700<MW<=1100)  | 25036-25-3  | (C21H24O4.<br>C15H16O2)x     | 3 - <5   |
| Phenol, methylstyrenated  | 68512-30-1  | -                            | 3 - <5   |
| 2-methylpropan-1-ol   | 78-83-1     | C4-H10-O                     | 1- <3    |
| 2,3-epoxypropyl neodecanoate  | 26761-45-5  | C13-H24-O3                   | 1- <3    |
| crystalline silica, respirable powder (<10 microns)   | 14808-60-7  | O2-Si                        | 1- <3    |
| 12-hydroxyoctadecanoic acid, reaction products with<br>1,3-benzenedimethanamine and<br>hexamethylenediamine | 220926-97-6 | CHON                         | 1- <3    |

There are no 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.

SUB codes represent substances without registered CAS Numbers.

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

### Section 4. First aid measures

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects. acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- 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.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing

## Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable 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  
nitrogen oxides  
sulfur oxides  
halogenated compounds  
metal oxide/oxides

### Special protective actions for fire-fighters

- : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

### Special protective equipment for fire-fighters

- : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor 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

- Protective measures** : 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 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.

## Section 7. Handling and storage

**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   |
|---|---|
| Barium sulfate  | <b>ACGIH TLV (United States, 3/2019).</b><br>TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction   |
| Talc , not containing asbestiform fibres  | <b>Ministry of Health (Viet Nam, 10/2002).</b><br>TWA: 1 mg/m <sup>3</sup> 8 hours. Form: respirable dust<br>TWA: 2 mg/m <sup>3</sup> 8 hours. Form: total dust concentration |
| xylene  | <b>Ministry of Health (Viet Nam, 10/2002).</b><br>STEL: 300 mg/m <sup>3</sup> 15 minutes.<br>TWA: 100 mg/m <sup>3</sup> 8 hours.  |
| 2-methylpropan-1-ol   | <b>Ministry of Health (Viet Nam, 10/2002).</b><br>STEL: 250 mg/m <sup>3</sup> 15 minutes.<br>TWA: 150 mg/m <sup>3</sup> 8 hours.  |
| crystalline silica, respirable powder (<10 microns)   | <b>ACGIH TLV (United States, 3/2019).</b><br>TWA: 0.025 mg/m <sup>3</sup> 8 hours. Form: Respirable   |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | <b>ACGIH TLV (United States).</b><br>TWA: 10 mg/m <sup>3</sup> Form: Inhalable particle<br>TWA: 3 mg/m <sup>3</sup> , (inhalable dust) Form: Respirable particle              |

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**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.

## Section 8. Exposure controls/personal protection

**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/face protection** : Chemical splash goggles.

### 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** : Brownish-red.

**Odor** : Aromatic. [Slight]

**Odor threshold** : Not available.

**pH** : Not available.

**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.

## Section 9. Physical and chemical properties

|   |   |
|---|---|
| <b>Lower and upper explosive (flammable) limits</b> | : Greatest known range: Lower: 1.7% Upper: 10.9% (2-methylpropan-1-ol)                              |
| <b>Vapor pressure</b>                               | : Not available.  |
| <b>Vapor density</b>                                | : Not available.  |
| <b>Relative density</b>                             | : 1.71  |
| <b>Solubility</b>                                   | : Insoluble in the following materials: cold water.   |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available.  |
| <b>Auto-ignition temperature</b>                    | : Not available.  |
| <b>Decomposition temperature</b>                    | : Not available.  |
| <b>Viscosity</b>                                    | : Kinematic (room temperature): >4 cm <sup>2</sup> /s<br>Kinematic (40°C): >0.21 cm <sup>2</sup> /s |
| <b>Viscosity</b>                                    | : > 100 s (ISO 6mm)   |

## 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 sulfur oxides halogenated compounds metal oxide/oxides |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name    | Result                | Species | Dose        | Exposure |
|----------------------------|-----------------------|---------|-------------|----------|
| Epoxy resin (MW ≤ 700)     | LD50 Dermal           | Rabbit  | >2 g/kg     | -        |
|                            | LD50 Oral             | Rat     | >2 g/kg     | -        |
| barium sulfate             | LD50 Dermal           | Rat     | >2000 mg/kg | -        |
|                            | LD50 Oral             | Rat     | >5000 mg/kg | -        |
| xylene                     | LD50 Dermal           | Rabbit  | >1.7 g/kg   | -        |
|                            | LD50 Oral             | Rat     | 4.3 g/kg    | -        |
| Epoxy Resin (700<MW ≤1100) | LD50 Dermal           | Rat     | >2000 mg/kg | -        |
|                            | LD50 Oral             | Rat     | >2000 mg/kg | -        |
| Phenol, methylstyrenated   | LD50 Dermal           | Rabbit  | >2000 mg/kg | -        |
|                            | LD50 Oral             | Rat     | >2000 mg/kg | -        |
| 2-methylpropan-1-ol        | LC50 Inhalation Vapor | Rat     | 24.6 mg/l   | 4 hours  |
|                            | LD50 Dermal           | Rabbit  | 2460 mg/kg  | -        |



**Section 11. Toxicological information**

|   |                                 |     |             |         |
|---|---------------------------------|-----|-------------|---------|
| 2,3-epoxypropyl neodecanoate  | LD50 Oral                       | Rat | 2830 mg/kg  | -       |
|   | LD50 Dermal                     | Rat | 3800 mg/kg  | -       |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | LD50 Oral                       | Rat | 9.6 g/kg    | -       |
|   | LC50 Inhalation Dusts and mists | Rat | 3.56 mg/l   | 4 hours |
|   | LD50 Dermal                     | Rat | >2000 mg/kg | -       |
|   | LD50 Oral                       | Rat | >2000 mg/kg | -       |

**Conclusion/Summary** : There are no data available on the mixture itself.

**Irritation/Corrosion**

| Product/ingredient name | Result                   | Species | Score | Exposure        | Observation |
|-------------------------|--------------------------|---------|-------|-----------------|-------------|
| Epoxy resin (MW ≤ 700)  | Skin - Mild irritant     | Rabbit  | -     | -               | -           |
| xylene                  | Eyes - Mild irritant     | Rabbit  | -     | -               | -           |
|                         | Skin - Moderate irritant | Rabbit  | -     | 24 hours 500 mg | -           |

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitization**

| Product/ingredient name | Route of exposure | Species | Result      |
|-------------------------|-------------------|---------|-------------|
| Epoxy resin (MW ≤ 700)  | skin              | Mouse   | Sensitizing |

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Reproductive toxicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Teratogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

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

**Specific target organ toxicity (repeated exposure)**

## Section 11. Toxicological information

| Name  | Category                 | Route of exposure        | Target organs           |
|---|--------------------------|--------------------------|-------------------------|
| crystalline silica, respirable powder (<10 microns)<br>12-hydroxyoctadecanoic acid, reaction products with<br>1,3-benzenedimethanamine and hexamethylenediamine | Category 1<br>Category 2 | Inhalation<br>Inhalation | Not determined<br>lungs |

### Aspiration hazard

| Name                          | Result   |
|-------------------------------|--|
| xylene<br>2-methylpropan-1-ol | ASPIRATION HAZARD - Category 1<br>ASPIRATION HAZARD - Category 2 |

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- 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 or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : No specific data.

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

#### 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

|                              |   |
|------------------------------|---|
| <b>Carcinogenicity</b>       | : No known significant effects or critical hazards. |
| <b>Mutagenicity</b>          | : Suspected of causing genetic defects.             |
| <b>Teratogenicity</b>        | : No known significant effects or critical hazards. |
| <b>Developmental effects</b> | : No known significant effects or critical hazards. |
| <b>Fertility effects</b>     | : No known significant effects or critical hazards. |

### Numerical measures of toxicity

#### Acute toxicity estimates

| Route                        | ATE value     |
|------------------------------|---------------|
| Oral                         | 6956.04 mg/kg |
| Dermal                       | 2379.3 mg/kg  |
| Inhalation (vapors)          | 37.13 mg/l    |
| Inhalation (dusts and mists) | 4.59 mg/l     |

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

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. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

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.

Based on the properties of the epoxy constituent(s) and considering toxicological data on similar mixtures, this mixture may be a skin sensitizer and an irritant. It contains low-molecular weight epoxy constituents which are irritating to eyes, mucous membranes and skin. Repeated skin contact may lead to irritation and to sensitization, possibly with cross-sensitization to other epoxies. Skin contact with the mixture and exposure to spray, mist and vapors should be avoided.

Contains Epoxy resin (MW ≤ 700), Epoxy Resin (700 < MW ≤ 1100), Phenol, methylstyrenated, 2,3-epoxypropyl neodecanoate. May produce an allergic reaction.

## Section 12. Ecological information

### Toxicity

| Product/ingredient name   | Result   | Species   | Exposure                         |
|---|--|---|----------------------------------|
| Epoxy resin (MW ≤ 700)  | Acute LC50 1.8 mg/l<br>Chronic NOEC 0.3 mg/l                       | Daphnia<br>Daphnia  | 48 hours<br>21 days              |
| 2-methylpropan-1-ol   | Acute EC50 1100 mg/l   | Daphnia   | 48 hours                         |
| 2,3-epoxypropyl neodecanoate  | Acute EC50 3.5 mg/l  | Algae   | 96 hours                         |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | Acute EC50 4.8 mg/l<br>Acute LC50 9.6 mg/l<br>Acute EC50 >100 mg/l | Daphnia - Daphnia magna<br>Fish - Oncorhynchus mykiss<br>Algae - Pseudokirchneriella subcapitata (microalgae) | 48 hours<br>96 hours<br>72 hours |

## Section 12. Ecological information

|                       |  |          |
|-----------------------|--|----------|
| Acute EC50 >100 mg/l  | Daphnia - Daphnia magna (Water flea)       | 48 hours |
| Acute LC50 >100 mg/l  | Fish - Oncorhynchus mykiss (rainbow trout) | 96 hours |
| Chronic NOEC 100 mg/l | Algae - Pseudokirchneriella subcapitata    | 72 hours |
| Chronic NOEC ≥50 mg/l | Daphnia - Daphnia magna (Water flea)       | 21 days  |

### Persistence and degradability

| Product/ingredient name   | Test  | Result                      | Dose | Inoculum |
|---|---|-----------------------------|------|----------|
| Epoxy resin (MW ≤ 700)<br>12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | OECD 301F                                   | 5 % - 28 days               | -    | -        |
|   | OECD 301D                                   | 9 % - Not readily - 29 days | -    | -        |
|   | Ready Biodegradability - Closed Bottle Test |                             |      |          |

| Product/ingredient name      | Aquatic half-life | Photolysis | Biodegradability |
|------------------------------|-------------------|------------|------------------|
| Epoxy resin (MW ≤ 700)       | -                 | -          | Not readily      |
| xylene                       | -                 | -          | Readily          |
| 2,3-epoxypropyl neodecanoate | -                 | -          | Not readily      |

### Bioaccumulative potential

| Product/ingredient name   | LogP <sub>ow</sub> | BCF         | Potential |
|---|--------------------|-------------|-----------|
| Epoxy resin (MW ≤ 700)  | 3                  | 31          | low       |
| xylene  | 3.16               | 7.4 to 18.5 | low       |
| 2-methylpropan-1-ol   | 0.76               | -           | low       |
| 2,3-epoxypropyl neodecanoate  | 4.4                | -           | high      |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | >6                 | -           | high      |

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : 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

## Section 13. Disposal considerations

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

|                             | UN              | 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

- UN** : This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.1.
- 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.

## Section 15. Regulatory information

**Safety, health and environmental regulations specific for the product** : No known specific national and/or regional regulations applicable to this product (including its ingredients).

### Circular no. 05/1999/TT-BYT

| Ingredient name          | Category   | Notes |
|--------------------------|------------|-------|
| benzene                  | Category 1 |       |
| toluene                  | Category 2 |       |
| xylene                   | Category 2 |       |
| mercury                  | Category 2 |       |
| selenium                 | Category 1 |       |
| Cadmium (Non-pyrophoric) | Category 2 |       |
| antimony                 | Category 2 |       |
| lead massive             | Category 2 |       |
| arsenic                  | Category 1 |       |

Product code 00388500

Date of issue 18 November 2019 Version 4

Product name SIGMASHIELD 880 GF BASE REDBROWN

## Section 15. Regulatory information

|                        |            |
|------------------------|------------|
| 1,4-dioxane            | Category 2 |
| chloromethane          | Category 2 |
| Formaldehyde, solution | Category 2 |
| ethylene oxide         | Category 2 |

Toxic classification (TCVN : 3164-79)

## Section 16. Other information

### History

Date of issue/Date of revision : 18 November 2019

Date of previous issue : 9/14/2019

Version : 4

Prepared by : EHS

**Key to abbreviations** : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

**References** : Not available.

📌 Indicates information that has changed from previously issued version.

### Notice to reader

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.