

# SAFETY DATA SHEET



SIGMA ECOFLEET 290 REDBROWN

Date of issue 15 October 2020

Version 26

## 1. Product and company identification

**Product name** : SIGMA ECOFLEET 290 REDBROWN  
**Product code** : 00329046  
**Product type** : Liquid.

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

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


**Use of the substance/  
mixture** : Antifouling products

**Uses advised against** : Not applicable.

**Supplier's details** : PPG PMC Japan Co., Ltd.  
8F, Shintetsu Bldg., 1-1, Daikaidori 1-chome, Kobe 652-0803  
Tel : +81 78 574 2777  
Fax : +81 78 576 0035

**Emergency telephone  
number** : 078 574 2777

## 2. Hazards identification

**GHS Classification** :  FLAMMABLE LIQUIDS - Category 3  
SERIOUS EYE DAMAGE - Category 1  
RESPIRATORY SENSITIZATION - Category 1  
SKIN SENSITIZATION - Category 1  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
AQUATIC HAZARD (ACUTE) - Category 1  
AQUATIC HAZARD (LONG-TERM) - Category 1

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

## 2. Hazards identification

- Hazard statements** : **F**lammable liquid and vapor.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Suspected of causing cancer.  
May damage fertility or the unborn child.  
Causes damage to organs. (respiratory system, systemic toxicity)  
May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS), respiratory system)  
Very toxic to aquatic life with long lasting effects.
- Precautionary statements**
- Prevention** : Obtain special instructions before use. Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product.
- Response** : Collect spillage. IF exposed or concerned: Call a POISON CENTER or doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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. Keep cool.
- 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.

## 3. Composition/information on ingredients

**Substance/mixture** : Mixture

### CAS number/other identifiers

**CAS number** : Not applicable.

**ENCS number** : Not available.

| Ingredient name   | %          | CAS number  | ENCS           |
|---|------------|-------------|----------------|
| <b>F</b> ine copper oxide   | 25 - <50   | 1317-39-1   | 1-297          |
| Rosin   | 10 - <12.5 | 8050-09-7   | 7-935          |
| Zinc oxide  | 10 - <12.5 | 1314-13-2   | 1-561          |
| methyl isobutyl ketone  | 7 - <10    | 108-10-1    | 2-542          |
| Solvent naphtha (petroleum), light aromatic   | 7 - <10    | 64742-95-6  | Not available. |
| Diiron trioxide   | 5 - <7     | 1309-37-1   | 1-357; 5-5188  |
| 1,2,4-Trimethylbenzene  | 3 - <5     | 95-63-6     | 3-3427; 3-7    |
| Zinc N,N'-ethylenebis(dithiocarbamate)  | 3 - <5     | 12122-67-7  | 2-1841         |
| Propane, 1-(ethenoxy)-2-methyl-, polymer with chloroethene  | 1 - <2     | 25154-85-2  | 6-86           |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | 1 - <2     | 220926-97-6 | Not available. |

### 3. Composition/information on ingredients

|                  |            |           |                |
|------------------|------------|-----------|----------------|
| ethyl benzene    | 1 - <2     | 100-41-4  | 3-28; 3-60     |
| Xylene           | 0.5 - <1   | 1330-20-7 | 3-3; 3-60      |
| copper(II) oxide | 0.5 - <1   | 1317-38-0 | 1-297          |
| Copper           | 0.2 - <0.5 | 7440-50-8 | Not available. |
| Cumene           | 0.1 - <0.2 | 98-82-8   | 3-22           |
| zinc sulphide    | 0.1 - <0.2 | 1314-98-3 | 1-572          |

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

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

SUB codes represent substances without registered CAS Numbers.

### 4. First aid measures

#### Description of necessary first aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

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

##### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : Causes damage to organs following a single exposure in contact with skin. Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Causes damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
wheezing and breathing difficulties  
asthma  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

## 4. First aid measures

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

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

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

See toxicological information (Section 11)

## 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 very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
nitrogen oxides  
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.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## 7. Handling and storage

- Precautions for safe handling** : Put on appropriate personal protective equipment (see Section 8). 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. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Refer to special instructions/safety data sheet. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

## 7. Handling and storage

**Conditions for safe storage** : 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.

## 8. Exposure controls/personal protection

### Control parameters

### Occupational exposure limits

| Ingredient name        | Exposure limits   |
|------------------------|---|
| Rosin                  | <b>Japan Society for Occupational Health (Japan, 5/2019). Skin sensitizer. Inhalation sensitizer.</b>   |
| Zinc oxide             | <b>Japan Society for Occupational Health (Japan, 5/2019).</b><br>OEL-M: 1 mg/m <sup>3</sup> 8 hours. Form: Respirable dust  |
| methyl isobutyl ketone | OEL-M: 4 mg/m <sup>3</sup> 8 hours. Form: Total dust<br><b>Japan Society for Occupational Health (Japan, 5/2019).</b><br>OEL-M: 200 mg/m <sup>3</sup> 8 hours.<br>OEL-M: 50 ppm 8 hours.<br><b>ISHL (Japan, 10/2019).</b><br>TWA: 20 ppm 8 hours. |
| Diiron trioxide        | <b>Japan Society for Occupational Health (Japan, 5/2019).</b><br>OEL-M: 1 mg/m <sup>3</sup> 8 hours. Form: Respirable dust  |
| 1,2,4-Trimethylbenzene | OEL-M: 4 mg/m <sup>3</sup> 8 hours. Form: Total dust<br><b>Japan Society for Occupational Health (Japan, 5/2019).</b><br>OEL-M: 120 mg/m <sup>3</sup> 8 hours.<br>OEL-M: 25 ppm 8 hours.  |
| ethyl benzene          | <b>Japan Society for Occupational Health (Japan, 5/2019).</b><br>OEL-M: 217 mg/m <sup>3</sup> 8 hours.<br>OEL-M: 50 ppm 8 hours.<br><b>ISHL (Japan, 10/2019).</b><br>TWA: 20 ppm 8 hours.   |
| Xylene                 | <b>ISHL (Japan, 10/2019).</b><br>TWA: 50 ppm 8 hours.<br><b>Japan Society for Occupational Health (Japan, 5/2019).</b><br>OEL-M: 50 ppm 8 hours.<br>OEL-M: 217 mg/m <sup>3</sup> 8 hours.   |

**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.

## 8. Exposure controls/personal protection

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye protection** : Chemical splash goggles and face shield.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Gloves** : 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.

## 9. Physical and chemical properties

### Appearance

**Physical state** : Liquid.

**Color** : Brownish-red.

**Odor** : Aromatic.

**Boiling point** : >37.78°C (>100°F)

**Flash point** : Closed cup: 27.2°C (81°F)

**Relative density** : 1.67

**Solubility** : Insoluble in the following materials: cold water.

## 9. Physical and chemical properties

**Viscosity** : 60 - 100 s (ISO 6mm)

## 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** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name   | Result                          | Species | Dose                    | Exposure |
|---|---------------------------------|---------|-------------------------|----------|
| Copper oxide  | LC50 Inhalation Dusts and mists | Rat     | 3.34 mg/l               | 4 hours  |
|   | LD50 Dermal                     | Rat     | >2000 mg/kg             | -        |
|   | LD50 Oral                       | Rat     | 1340 mg/kg              | -        |
| Rosin   | LD50 Dermal                     | Rat     | >2000 mg/kg             | -        |
|   | LD50 Oral                       | Rat     | 7600 mg/kg              | -        |
| Zinc oxide  | LC50 Inhalation Dusts and mists | Rat     | >5700 mg/m <sup>3</sup> | 4 hours  |
|   | LD50 Dermal                     | Rat     | >2000 mg/kg             | -        |
|   | LD50 Oral                       | Rat     | >5000 mg/kg             | -        |
| methyl isobutyl ketone  | LC50 Inhalation Vapor           | Rat     | 12.3 mg/l               | 4 hours  |
|   | LD50 Dermal                     | Rabbit  | >5000 mg/kg             | -        |
|   | LD50 Oral                       | Rat     | 2.08 g/kg               | -        |
| Solvent naphtha (petroleum), light aromatic   | LD50 Dermal                     | Rabbit  | 3.48 g/kg               | -        |
|   | LD50 Oral                       | Rat     | 8400 mg/kg              | -        |
| Diiron trioxide   | LC50 Inhalation Dusts and mists | Rat     | >5 mg/l                 | 4 hours  |
|   | LD50 Oral                       | Rat     | 10 g/kg                 | -        |
| 1,2,4-Trimethylbenzene  | LC50 Inhalation Vapor           | Rat     | 18000 mg/m <sup>3</sup> | 4 hours  |
|   | LD50 Oral                       | Rat     | 5 g/kg                  | -        |
| Zinc N,N'-ethylenebis (dithiocarbamate)   | LD50 Oral                       | Rat     | >2000 mg/kg             | -        |
|   | LC50 Inhalation Dusts and mists | Rat     | 3.56 mg/l               | 4 hours  |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | LD50 Dermal                     | Rat     | >2000 mg/kg             | -        |
|   | LD50 Oral                       | Rat     | >2000 mg/kg             | -        |
|   | LC50 Inhalation Vapor           | Rat     | 17.8 mg/l               | 4 hours  |
|   | LD50 Dermal                     | Rabbit  | 17.8 g/kg               | -        |
| ethyl benzene   | LD50 Oral                       | Rat     | 3.5 g/kg                | -        |



## 11. Toxicological information

|                  |                       |        |                         |         |
|------------------|-----------------------|--------|-------------------------|---------|
| Xylene           | LD50 Dermal           | Rabbit | 1.7 g/kg                | -       |
|                  | LD50 Oral             | Rat    | 4.3 g/kg                | -       |
| copper(II) oxide | LD50 Oral             | Rat    | >2000 mg/kg             | -       |
| Cumene           | LC50 Inhalation Vapor | Rat    | 39000 mg/m <sup>3</sup> | 4 hours |
|                  | LD50 Dermal           | Rabbit | 12.3 g/kg               | -       |
|                  | LD50 Oral             | Rat    | 1400 mg/kg              | -       |

### Irritation/Corrosion

| Product/ingredient name | Result                   | Species | Score | Exposure        | Observation |
|-------------------------|--------------------------|---------|-------|-----------------|-------------|
| Xylene                  | Skin - Moderate irritant | Rabbit  | -     | 24 hours 500 mg | -           |

### Sensitization

| Product/ingredient name                 | Route of exposure | Species    | Result      |
|---|-------------------|------------|-------------|
| Zinc N,N'-ethylenebis (dithiocarbamate) | skin              | Guinea pig | Sensitizing |

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

| Name  | Category                 | Route of exposure | Target organs  |
|---|--------------------------|-------------------|--|
| Copper oxide                                | Category 1<br>Category 3 | -                 | systemic toxicity<br>Respiratory tract irritation  |
| Zinc oxide                                  | Category 1               | -                 | respiratory system,<br>systemic toxicity   |
| methyl isobutyl ketone                      | Category 3               | -                 | Respiratory tract irritation   |
| Solvent naphtha (petroleum), light aromatic | Category 3<br>Category 3 | -                 | Narcotic effects<br>Respiratory tract irritation   |
| Diiron trioxide                             | Category 3<br>Category 3 | -                 | Narcotic effects<br>Respiratory tract irritation   |
| 1,2,4-Trimethylbenzene                      | Category 3               | -                 | Respiratory tract irritation   |
| Zinc N,N'-ethylenebis(dithiocarbamate)      | Category 3               | -                 | Narcotic effects   |
| ethyl benzene                               | Category 3<br>Category 3 | -                 | Narcotic effects<br>Respiratory tract irritation   |
| Xylene                                      | Category 3<br>Category 1 | -                 | Narcotic effects<br>central nervous system (CNS),<br>kidneys, liver,<br>respiratory system |
|   | Category 3               |                   | Narcotic effects   |

## 11. Toxicological information

|                  |  |   |   |
|------------------|--|---|---|
| copper(II) oxide | Category 1<br>Category 3                       | - | systemic toxicity<br>Respiratory tract irritation   |
| Copper           | Category 1<br>Category 3                       | - | digestive system<br>Respiratory tract irritation  |
| Cumene           | Category 1<br><br>Category 3<br><br>Category 3 | - | central nervous system (CNS),<br>kidneys, liver<br>Respiratory tract irritation<br>Narcotic effects |

### Specific target organ toxicity (repeated exposure)

| Name   | Category   | Route of exposure | Target organs                          |
|--|------------|-------------------|--|
| methyl isobutyl ketone   | Category 1 | -                 | central nervous system (CNS)           |
| Diiron trioxide  | Category 1 | -                 | respiratory system                     |
| 1,2,4-Trimethylbenzene   | Category 2 | -                 | central nervous system (CNS),<br>lungs |
| Zinc N,N'-ethylenebis(dithiocarbamate)   | Category 1 | -                 | respiratory system                     |
| 12-hydroxyoctadecanoic acid, reaction products with<br>1,3-benzenedimethanamine and hexamethylenediamine | Category 2 | inhalation        | lungs                                  |
| ethyl benzene  | Category 2 | -                 | hearing organs                         |
| Xylene   | Category 1 | -                 | nervous system,<br>respiratory system  |

### Aspiration hazard

| Name  | Result                         |
|---|--------------------------------|
| Solvent naphtha (petroleum), light aromatic | ASPIRATION HAZARD - Category 1 |
| 1,2,4-Trimethylbenzene                      | ASPIRATION HAZARD - Category 1 |
| ethyl benzene                               | ASPIRATION HAZARD - Category 1 |
| Xylene                                      | ASPIRATION HAZARD - Category 1 |
| Cumene                                      | ASPIRATION HAZARD - Category 1 |

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

### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : Causes damage to organs following a single exposure in contact with skin. Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Causes damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression.

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

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

## 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
wheezing and breathing difficulties  
asthma  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

**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.

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

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

**Reproductive toxicity** : May damage fertility or the unborn child.

### Numerical measures of toxicity

#### Acute toxicity estimates

## 11. Toxicological information

| Product/ingredient name   | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| SIGMA ECOFLEET 290 REDBROWN   | 4599.3       | 20869.2        | N/A                      | 27.1                       | 5.3                                 |
| dicopper oxide  | 1340         | 2500           | N/A                      | N/A                        | 3.34                                |
| Rosin   | 7600         | 2500           | N/A                      | N/A                        | 1.5                                 |
| Zinc oxide  | N/A          | 2500           | N/A                      | N/A                        | N/A                                 |
| methyl isobutyl ketone  | 2080         | N/A            | N/A                      | 3                          | N/A                                 |
| Solvent naphtha (petroleum), light aromatic   | 8400         | 3480           | N/A                      | N/A                        | N/A                                 |
| Diiron trioxide   | 10000        | N/A            | N/A                      | N/A                        | N/A                                 |
| 1,2,4-Trimethylbenzene  | 5000         | N/A            | N/A                      | 18                         | N/A                                 |
| Zinc N,N'-ethylenebis(dithiocarbamate)  | 2500         | N/A            | N/A                      | N/A                        | N/A                                 |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | 2500         | 2500           | N/A                      | N/A                        | 3.56                                |
| ethyl benzene   | 3500         | 17800          | N/A                      | 17.8                       | N/A                                 |
| Xylene  | 4300         | 1700           | N/A                      | 11                         | N/A                                 |
| copper(II) oxide  | 2500         | N/A            | N/A                      | N/A                        | N/A                                 |
| Cumene  | N/A          | 12300          | N/A                      | 3                          | N/A                                 |

### Other information

Prolonged or repeated contact may dry skin and cause irritation. Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing.

## 12. Ecological information

### Toxicity

| Product/ingredient name   | Result                                 | Species  | Exposure |
|---|--|--|----------|
| dicopper oxide  | LC50 0.003 mg/l                        | Fish   | 96 hours |
| Zinc oxide  | Acute EC50 0.17 mg/l                   | Algae  | 72 hours |
|   | Acute EC50 0.481 mg/l Fresh water      | Daphnia - Daphnia magna - Neonate                    | 48 hours |
|   | Chronic NOEC 0.017 mg/l Fresh water    | Algae  | 72 hours |
| methyl isobutyl ketone  | Acute LC50 >179 mg/l                   | Fish   | 96 hours |
| Solvent naphtha (petroleum), light aromatic   | Acute LC50 8.2 mg/l                    | Fish   | 96 hours |
| Diiron trioxide   | Acute EC50 >100 mg/l                   | Daphnia  | 48 hours |
| 12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine | Acute EC50 >100 mg/l                   | Algae - Pseudokirchneriella subcapitata (microalgae) | 72 hours |
|   | 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  |
| ethyl benzene   | Acute LC50 150 to 200 mg/l Fresh water | Fish   | 96 hours |
| Copper  | Acute LC50 810 ppb                     | Fish   | 96 hours |

## 12. Ecological information

### Persistence/degradability

| Product/ingredient name  | Test   | Result  | Dose | Inoculum |
|--|--|---|------|----------|
| <input checked="" type="checkbox"/> methyl isobutyl ketone<br>12-hydroxyoctadecanoic acid,<br>reaction products with<br>1,3-benzenedimethanamine<br>and hexamethylenediamine | OECD 301F<br>OECD 301D<br>Ready<br>Biodegradability -<br>Closed Bottle<br>Test | 83 % - Readily - 28 days<br>9 % - Not readily - 29 days | -    | -        |

| Product/ingredient name   | Aquatic half-life | Photolysis | Biodegradability              |
|---|-------------------|------------|-------------------------------|
| <input checked="" type="checkbox"/> methyl isobutyl ketone<br>ethyl benzene<br>Xylene | -                 | -          | Readily<br>Readily<br>Readily |

### Bioaccumulative potential

| Product/ingredient name  | LogP <sub>ow</sub>  | BCF              | Potential       |
|--|---------------------|------------------|-----------------|
| <input checked="" type="checkbox"/> methyl isobutyl ketone<br>1,2,4-Trimethylbenzene<br>Zinc N,N'-ethylenebis<br>(dithiocarbamate) | 1.31<br>3.63<br>1.3 | -<br>120.23<br>- | low<br>low<br>- |
| 12-hydroxyoctadecanoic acid,<br>reaction products with<br>1,3-benzenedimethanamine<br>and hexamethylenediamine                     | >6                  | -                | high            |
| ethyl benzene  | 3.15                | 79.43            | low             |
| Xylene   | 3.16                | 7.4 to 18.5      | low             |
| Cumene   | 3.66                | 35.48            | low             |

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## 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.

## 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       | Yes. The environmentally hazardous substance mark is not required. | Yes.                         | Yes. The environmentally hazardous substance mark is not required. |
| Marine pollutant substances | Not applicable.  | (dicopper oxide, zinc oxide) | Not applicable.  |

### Additional information

**UN** : None identified.

**IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

**IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.

## 15. Regulatory information

### Fire Service Law

| Category    | Substance name/Type | Danger category | Signal word                | Designated quantity |
|-------------|---------------------|-----------------|----------------------------|---------------------|
| Category IV | Class II petroleum  | III             | Flammable - Keep Fire Away | 1000 L              |

### Pollutant Release and Transfer Registers (PRTR)

| Ingredient name        | %      | Status  | Reference number |
|------------------------|--------|---------|------------------|
| 1,2,4-Trimethylbenzene | 4.632  | Class 1 | 296              |
| Ethylbenzene           | 1.0297 | Class 1 | 53               |

### ISHL

#### Use of specified chemical substances

| Ingredient name        | %    | Status                               | Reference number |
|------------------------|------|--------------------------------------|------------------|
| Ethyl benzene          | ≤1.3 | Group-2 Substances under Supervision | 3-3              |
| Methyl isobutyl ketone | <10  | Special Organic Solvents             | 33-2             |

#### Substances requiring labelling

## 15. Regulatory information

| Ingredient name                  | %         | Status | Reference number |
|----------------------------------|-----------|--------|------------------|
| ☑Copper and its compounds        | ≥25 - ≤30 | Listed | 379              |
| Petroleum naphtha                | ≤10       | Listed | 330              |
| Trimethylbenzene                 | ≤5.0      | Listed | 404              |
| Xylene                           | <1.0      | Listed | 136              |
| Ethylbenzene                     | ≤1.3      | Listed | 70               |
| Rosin                            | ≤11       | Listed | 632              |
| Zinc oxide                       | ≥10 - ≤25 | Listed | 188              |
| Methyl isobutyl ketone           | <10       | Listed | 569              |
| Iron oxide; Diiron(III) trioxide | <10       | Listed | 192              |

### Chemicals requiring notification

| Ingredient name                  | %         | Status | Reference number |
|----------------------------------|-----------|--------|------------------|
| ☑Copper and its compounds        | ≥25 - ≤30 | Listed | 379              |
| Copper and its compounds         | <1.0      | Listed | 379              |
| Copper and its compounds         | ≤0.30     | Listed | 379              |
| Petroleum naphtha                | ≤10       | Listed | 330              |
| Trimethylbenzene                 | ≤5.0      | Listed | 404              |
| Xylene                           | <1.0      | Listed | 136              |
| Cumene                           | ≤0.30     | Listed | 138              |
| Ethylbenzene                     | ≤1.3      | Listed | 70               |
| Rosin                            | ≤11       | Listed | 632              |
| Zinc oxide                       | ≥10 - ≤25 | Listed | 188              |
| Methyl isobutyl ketone           | <10       | Listed | 569              |
| Iron oxide; Diiron(III) trioxide | <10       | Listed | 192              |

### Carcinogen

| Ingredient name         | %   | Status | Reference number |
|-------------------------|-----|--------|------------------|
| ☑methyl isobutyl ketone | <10 | Listed | -                |

### Mutagen

None of the components are listed.

- Corrosive liquid** : Not listed
- Occupational Safety and Health Law** : Flammable liquid Class 3
- Regulations on the Prevention of Tetraalkyl Lead Poisoning** : Not listed
- Harmful Substances Subject to Obtaining Permission for Manufacturing** : Not listed
- Harmful Substances, Prohibited for Manufacturing** : Not listed
- Dangerous Substances** : Not listed
- Lead regulation** : Not listed
- Organic solvents poisoning prevention** : Class 2

## 15. Regulatory information

### Poisonous and Deleterious Substances

None of the components are listed.

### Chemical Substances Control Law (CSCL)

| Ingredient name        | %      | Status              | Reference number |
|------------------------|--------|---------------------|------------------|
| 1,2,4-Trimethylbenzene | 4.632  | Priority assessment | 49               |
| 1,3,5-Trimethylbenzene | 0.772  | Priority assessment | 201              |
| Xylene                 | 0.8563 | Priority assessment | 125              |
| Cumene                 | 0.1544 | Priority assessment | 126              |
| Ethylbenzene           | 1.0297 | Priority assessment | 50               |
| Methyl isobutyl ketone | 8.6869 | Priority assessment | 116              |

**High Pressure Gas Control Law** : Not available.

### Explosives Control Law

None of the components are listed.

**Law Concerning Prevention of Pollution of the Ocean and Maritime Disaster** : Not available.

### Maritime Safety Law

#### Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

### Container class

None of the components are listed.

**JSOH Carcinogen** : Group 2B

**List of Specially Controlled Industrial Waste** : Not listed

**Japan inventory** : At least one component is not listed.

**Road law** : Not available.

## 16. Other information

### History

**Date of issue/Date of revision** : 15 October 2020

**Date of previous issue** : 8/12/2020

**Version** : 26

**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  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973



## 16. Other information

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.

### [Notice to reader](#)

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