

# SAFETY DATA SHEET



## Penguard Universal Comp A

### Section 1. Identification

**UN number** : UN1263  
**GHS product identifier** : Penguard Universal Comp A  
**Product code** : 27800  
**Other means of identification** : Not available.  
**Product type** : Liquid.  
**Product description** : Paint.

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

##### Identified uses

Use in coatings - Industrial use  
Use in coatings - Professional use

**Supplier's details** : Jotun Paints (Vietnam) Co. Ltd.  
No., 1 Street 10,  
Song Than 1 Industrial Zone,  
Di An City,  
Binh Duong Province,  
Vietnam  
Phone: + 84 274 374 2206  
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SDSJotun@jotun.com  
Jotun Paints Viet Nam  
Hiep Phuoc Factory  
Ho Chi Minh City  
Lot F3, Street 01,  
Hiep Phuoc Industrial Zone,  
Hiep Phuoc Commune,  
Nha Be District,  
Ho Chi Minh, Viet Nam

**Emergency telephone number (with hours of operation)** : Office phone + 84 274 374 2206  
or + 47 33 45 70 00 Jotun Norway (head office)

### Section 2. Hazards identification

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 3  
SKIN IRRITATION - Category 2  
SERIOUS EYE DAMAGE - Category 1  
SKIN SENSITISATION - Category 1  
AQUATIC TOXICITY (CHRONIC) - Category 2

#### GHS label elements

##### Hazard pictograms



**Signal word** : Danger.

**Hazard statements** : H226 - Flammable liquid and vapour.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H318 - Causes serious eye damage.  
H411 - Toxic to aquatic life with long lasting effects.

## Section 2. Hazards identification

### Precautionary statements

- Prevention** : P280 - Wear protective gloves. Wear eye or face protection.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P273 - Avoid release to the environment.  
 P261 - Avoid breathing vapour.
- Response** : P391 - Collect spillage.  
 P362 + P364 - Take off contaminated clothing and wash it before reuse.  
 P302 + P352 - IF ON SKIN: Wash with plenty of water.  
 P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.  
 P305 + P351 + P338, P310 - 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** : P403 + P235 - Store in a well-ventilated place. Keep cool.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

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

| Ingredient name                  | %         | CAS number |
|----------------------------------|-----------|------------|
| epoxy resin (MW ≤ 700)           | ≥25 - ≤50 | 1675-54-3  |
| xylene                           | ≤10       | 1330-20-7  |
| glycidyl ether of 3-alkyl phenol | ≤5        | 68413-24-1 |
| butan-1-ol                       | ≤5        | 71-36-3    |
| ethylbenzene                     | ≤3        | 100-41-4   |
| Oleic acid, compound             | <0.025    | 34140-91-5 |

**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 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## Section 4. First aid measures

- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. 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  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- 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. Firefighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

## Section 5. Firefighting measures

|   |  |
|---|--|
| <b>Specific hazards arising from the chemical</b>     | : Flammable liquid and vapour. 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 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. |
| <b>Hazardous thermal decomposition products</b>       | : Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>halogenated compounds<br>metal oxide/oxides  |
| <b>Special protective actions for fire-fighters</b>   | : 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.   |
| <b>Special protective equipment for fire-fighters</b> | : 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

|                                    |  |
|------------------------------------|--|
| <b>For non-emergency personnel</b> | : 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| <b>For emergency responders</b>    | : If specialised 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".  |
| <b>Environmental precautions</b>   | : Avoid dispersal of spilt 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 material for containment and cleaning up

|                    |  |
|--------------------|--|
| <b>Small spill</b> | : 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.   |
| <b>Large spill</b> | : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the 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 spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. |

## Section 7. Handling and storage

### Precautions for safe handling

## Section 7. Handling and storage

- 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. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store 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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name | Exposure limits   |
|-----------------|---|
| xylene          | <b>Ministry of Health (Vietnam, 6/2019).</b><br><b>[xylene]</b>   |
| butan-1-ol      | STEL: 300 mg/m <sup>3</sup> 15 minutes.<br>TWA: 100 mg/m <sup>3</sup> 8 hours.<br><b>Ministry of Health (Vietnam, 6/2019).</b><br>TWA: 150 mg/m <sup>3</sup> 8 hours. |

- 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, vapour 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.

## Section 8. Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying to ISO 16321-1:2022 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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.
- There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.
- The breakthrough time must be greater than the end use time of the product.
- The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.
- Gloves should be replaced regularly and if there is any sign of damage to the glove material.
- Always ensure that gloves are free from defects and that they are stored and used correctly.
- The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.
- Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.
- Wear suitable gloves tested to ISO 374-1:2016.
- May be used, gloves(breakthrough time) 4 - 8 hours: Viton® (> 0.7 mm), neoprene (> 0.35 mm), butyl rubber (> 0.4 mm)
- Not recommended, gloves(breakthrough time) < 1 hour: PVC (> 0.5 mm)
- Recommended, gloves(breakthrough time) > 8 hours: nitrile rubber (> 0.75 mm), 4H/Silver Shield® (> 0.07 mm), Teflon (> 0.35 mm), polyvinyl alcohol (PVA) (> 0.3 mm)
- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- If workers are exposed to concentrations above the exposure limit, they must use a respirator according to EN 140. Use respiratory mask with charcoal and dust filter when spraying this product, according to EN 14387(as filter combination A2-P2). In confined spaces, use compressed-air or fresh-air respiratory equipment. When use of roller or brush, consider use of charcoalfilter.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Colour** : Aluminium, Grey
- Odour** : Characteristic.
- Odour threshold** : Not applicable.
- pH** : Not applicable.
- Melting point** : Not applicable.



## Section 9. Physical and chemical properties

|   |  |
|---|--|
| <b>Boiling point</b>                                | : >100°C (>212°F)  |
| <b>Flash point</b>                                  | : Closed cup: 35°C (95°F)  |
| <b>Evaporation rate</b>                             | : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.71 compared with butyl acetate                          |
| <b>Flammability (solid, gas)</b>                    | : Not applicable.  |
| <b>Lower and upper explosive (flammable) limits</b> | : 0.8 - 11.3%  |
| <b>Vapour pressure</b>                              | : Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.33 kPa (2.48 mm Hg) (at 20°C) |
| <b>Vapour density</b>                               | : Highest known value: 11.7 (Air = 1) (epoxy resin (MW ≤ 700)). Weighted average: 8.87 (Air = 1)                       |
| <b>Relative density</b>                             | : 1.473 to 1.605 g/cm <sup>3</sup>   |
| <b>Solubility</b>                                   | : cold water Not soluble<br>hot water Not soluble  |
| <b>Solubility in water</b>                          | : Not available.   |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available.   |
| <b>Auto-ignition temperature</b>                    | : Lowest known value: 355°C (671°F) (butan-1-ol).  |
| <b>Decomposition temperature</b>                    | : Not available.   |
| <b>Viscosity</b>                                    | : Kinematic (40°C (104°F)): >20.5 mm <sup>2</sup> /s (>20.5 cSt)   |
| <b>Flow time (ISO 2431)</b>                         | : Not available.   |

## 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>                | : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| <b>Incompatible materials</b>             | : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.  |
| <b>Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name | Result                 | Species    | Dose        | Exposure |
|-------------------------|------------------------|------------|-------------|----------|
| epoxy resin (MW ≤ 700)  | LD50 Dermal            | Rabbit     | 20 g/kg     | -        |
|                         | LD50 Oral              | Mouse      | 15600 mg/kg | -        |
| xylene                  | LC50 Inhalation Vapour | Rat        | 11 mg/l     | 4 hours  |
|                         | LD50 Oral              | Rat        | 4300 mg/kg  | -        |
|                         | TDLo Dermal            | Rabbit     | 4300 mg/kg  | -        |
| butan-1-ol              | LD50 Oral              | Rat        | 790 mg/kg   | -        |
| ethylbenzene            | LC50 Inhalation Vapour | Rat - Male | 11 mg/l     | 4 hours  |
|                         | LD50 Dermal            | Rabbit     | >5000 mg/kg | -        |
|                         | LD50 Oral              | Rat        | 3500 mg/kg  | -        |

#### Irritation/Corrosion

## Section 11. Toxicological information

| Product/ingredient name | Result                 | Species | Score | Exposure               | Observation |
|-------------------------|------------------------|---------|-------|------------------------|-------------|
| epoxy resin (MW ≤ 700)  | Eyes - Severe irritant | Rabbit  | -     | 24 hours 2 milligrams  | -           |
|                         | Skin - Mild irritant   | Rabbit  | -     | 500 milligrams         | -           |
| xylene                  | Eyes - Mild irritant   | Rabbit  | -     | 87 milligrams          | -           |
|                         | Skin - Mild irritant   | Rat     | -     | 8 hours 60 microliters | -           |

### Sensitisation

| Product/ingredient name          | Route of exposure | Species                      | Result      |
|----------------------------------|-------------------|------------------------------|-------------|
| epoxy resin (MW ≤ 700)           | skin              | Mammal - species unspecified | Sensitising |
| glycidyl ether of 3-alkyl phenol | skin              | Mammal - species unspecified | Sensitising |

### 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                |
|------------|------------|-------------------|------------------------------|
| xylene     | Category 3 | -                 | Respiratory tract irritation |
| butan-1-ol | Category 3 | -                 | Respiratory tract irritation |
|            | Category 3 | -                 | Narcotic effects             |

### Specific target organ toxicity (repeated exposure)

| Name                 | Category   | Route of exposure | Target organs  |
|----------------------|------------|-------------------|----------------|
| ethylbenzene         | Category 2 | -                 | hearing organs |
| Oleic acid, compound | Category 2 | -                 | -              |

### Aspiration hazard

| Name         | Result                         |
|--------------|--------------------------------|
| xylene       | ASPIRATION HAZARD - Category 1 |
| ethylbenzene | ASPIRATION HAZARD - Category 1 |

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

### Potential acute health effects

|                     |  |
|---------------------|--|
| <b>Eye contact</b>  | : Causes serious eye damage.                                   |
| <b>Inhalation</b>   | : No known significant effects or critical hazards.            |
| <b>Skin contact</b> | : Causes skin irritation. May cause an allergic skin reaction. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards.            |

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



## Section 11. Toxicological information

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects as well as 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

Not available.

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- 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 (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| Penguard Universal Comp A | 16666.7      | 13610.3        | N/A                      | 102.1                       | N/A                                 |
| xylene                    | N/A          | 1100           | N/A                      | 11                          | N/A                                 |
| butan-1-ol                | 500          | N/A            | N/A                      | N/A                         | N/A                                 |
| ethylbenzene              | N/A          | N/A            | N/A                      | 11                          | N/A                                 |

## Section 12. Ecological information

### Toxicity

| Product/ingredient name | Result  | Species   | Exposure                                     |
|-------------------------|---|---|--|
| epoxy resin (MW ≤ 700)  | Acute EC50 1.4 mg/l<br>Acute LC50 3.1 mg/l<br>Chronic NOEC 0.3 mg/l   | Daphnia<br>Fish - pimephales promelas<br>Fish                                 | 48 hours<br>96 hours<br>21 days              |
| xylene                  | Acute LC50 8500 µg/l Marine water   | Crustaceans - Palaemonetes pugio  | 48 hours                                     |
| ethylbenzene            | Acute LC50 13400 µg/l Fresh water<br>Acute EC50 7700 µg/l Marine water<br>Acute EC50 2.93 mg/l<br>Acute LC50 4.2 mg/l | Fish - Pimephales promelas<br>Algae - Skeletonema costatum<br>Daphnia<br>Fish | 96 hours<br>96 hours<br>48 hours<br>96 hours |

## Section 12. Ecological information

### Persistence and degradability

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| epoxy resin (MW ≤ 700)  | -                 | -          | Not readily      |
| xylene                  | -                 | -          | Readily          |
| ethylbenzene            | -                 | -          | Readily          |

### Bioaccumulative potential

| Product/ingredient name | LogP <sub>ow</sub> | BCF         | Potential |
|-------------------------|--------------------|-------------|-----------|
| epoxy resin (MW ≤ 700)  | 2.64 to 3.78       | 31          | low       |
| xylene                  | 3.12               | 8.1 to 25.9 | low       |
| butan-1-ol              | 1                  | -           | low       |
| ethylbenzene            | 3.6                | -           | low       |

### 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 minimised 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. Vapour 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 spilt 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. Marine pollutant (epoxy resin (MW ≤ 700))   | Paint  |
| Transport hazard class(es) | 3<br> | 3<br>  | 3<br> |
| 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.                         |

### Additional information

ADR/RID :

## Section 14. Transport information

The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

**Hazard identification number** 30

**Tunnel code** (D/E)

|                                     |   |
|-------------------------------------|---|
| <b>ADN</b>                          | : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  |
| <b>IMDG</b>                         | : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.<br><b>Emergency schedules</b> F-E, S-E  |
| <b>IATA</b>                         | : The environmentally hazardous substance mark may appear if required by other transportation regulations.  |
| <b>Special precautions for user</b> | : <b>Transport within user's premises:</b> 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 available.

## Section 15. Regulatory information

Circular no. 05/1999/TT-BYT

| <b>Ingredient name</b> | <b>Category</b> | <b>Notes</b> |
|------------------------|-----------------|--------------|
| xylene                 | Category 2      |              |

**Toxic classification (TCVN : 4 3164-79)**

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Other information

Ratings of danger according to

**NFPA**



**HMIS**

|                         |   |   |
|-------------------------|---|---|
| <b>Health</b>           | / | 3 |
| <b>Flammability</b>     |   | 3 |
| <b>Physical hazards</b> |   | 0 |
|                         |   |   |

History

|                                       |              |
|---------------------------------------|--------------|
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## Section 16. Other information

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 HMIS = Hazardous Material Information System (U.S.A.)  
 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)  
 N/A = Not available  
 NFPA = National Fire Protection Association (U.S.A.)  
 SGG = Segregation Group  
 UN = United Nations

### Procedure used to derive the classification

| Classification                          | Justification         |
|---|-----------------------|
| FLAMMABLE LIQUIDS - Category 3          | On basis of test data |
| SKIN IRRITATION - Category 2            | Calculation method    |
| SERIOUS EYE DAMAGE - Category 1         | Calculation method    |
| SKIN SENSITISATION - Category 1         | Calculation method    |
| AQUATIC TOXICITY (CHRONIC) - Category 2 | Calculation method    |

### References

: Not available.

Indicates information that has changed from previously issued version.

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