Section 1. Chemical product and company identification

A. **Product name**: Penguard Express Comp B
   - **Label No.**: 2401
   - **Product description**: Hardener.
   - **Product type**: Liquid.

B. **Relevant identified uses of the substance or mixture and uses advised against**
   - **Identified uses**
     - Use in coatings - Industrial use
     - Use in coatings - Professional use

C. **Supplier/Manufacturer**
   - Chokwang Jotun Ltd.
     96, Gwahaksandan 1-ro
     Gangseo-gu, Busan
     South Korea
     Tel: +82 51 797 6000
     Fax: +82 51 711 7735
     SDSJotun@jotun.com
   - **Emergency telephone number**
     - H.G.LEE Chokwang Jotun Ltd.
     Tel: +82 51 797 6000

Section 2. Hazards identification

A. **Hazard classification**
   - FLAMMABLE LIQUIDS - Category 3
   - SKIN CORROSION/IRRITATION - Category 2
   - SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
   - SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

B. **GHS label elements, including precautionary statements**
   - **Symbol**

     ![Symbol Image]

   - **Signal word**: Danger.
   - **Hazard statements**
     - Flammable liquid and vapour.
     - Causes serious eye damage.
     - Causes skin irritation.
     - May cause respiratory irritation.

   - **Precautionary statements**
     - **Prevention**: 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 breathing vapour. Wash hands thoroughly after handling.
Section 2. Hazards identification

Response:
- 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. Take off contaminated clothing. If skin irritation 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. Immediately call a POISON CENTER or physician.
- Get medical attention immediately. Call a poison center or physician. 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.
- Get medical attention immediately. Call a poison center or physician. 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- 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. In case of inhalation of decomposition products in a fire,

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.

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

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

CAS number/other identifiers:
- CAS number: Not applicable.
- EC number: Mixture.
- Product code: 2401

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>n-xylene</td>
<td>1330-20-7</td>
<td>10-20</td>
</tr>
<tr>
<td>butan-1-ol</td>
<td>n-butanol</td>
<td>71-36-3</td>
<td>2.5-10</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>ethylbenzene</td>
<td>100-41-4</td>
<td>2.5-10</td>
</tr>
<tr>
<td>2,4,6-tris(dimethylaminomethyl)phenol</td>
<td>2,4,6-tris (dimethylaminomethyl) phenol</td>
<td>90-72-2</td>
<td>1-2.5</td>
</tr>
<tr>
<td>1,2-Diamoethane</td>
<td>ethylene diamine</td>
<td>107-15-3</td>
<td>0.1-1</td>
</tr>
</tbody>
</table>

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

A. 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.

B. Skin contact:
- Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.

C. 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. In case of inhalation of decomposition products in a fire,
Section 4. First aid measures

D. Ingestion
Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.

Symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

E. 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. Firefighting measures

A. Extinguishing media
Suitable extinguishing media: Use dry chemical, CO₂, water spray (fog) or foam.
Unsuitable extinguishing media: Do not use water jet.

B. Specific hazards arising from the chemical
Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

C. 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.

Special precautions 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.

Section 6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures
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 split 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. Environmental precautions
Avoid dispersal of split 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).

C. Methods and material for containment and cleaning up
Section 6. Accidental release measures

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 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 spill product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

A. Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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.

B. 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 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

A. Control parameters

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>고용노동부 (Republic of Korea, 7/2018). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td>butan-1-ol</td>
<td>고용노동부 (Republic of Korea, 7/2018). Absorbed through skin. TWA: 20 ppm 8 hours.</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>고용노동부 (Republic of Korea, 7/2018). STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td>1,2-Diaminoethane</td>
<td>고용노동부 (Republic of Korea, 7/2018). Absorbed through skin. TWA: 10 ppm 8 hours.</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 27.03.2019
## Section 8. Exposure controls/personal protection

### B. Appropriate engineering controls

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 charcoal filter.

### 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.

### C. Personal protective equipment

#### Respiratory protection

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 charcoal filter.

#### Eye protection

Use safety eyewear designed to protect against splash of liquids.

#### Hand protection

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 EN374. Not recommended, gloves (breakthrough time) < 1 hour: PE
Recommended, gloves (breakthrough time) > 8 hours: 4H, Teflon, polyvinyl alcohol (PVA), nitrile rubber
May be used, gloves (breakthrough time) 4 - 8 hours: Viton®, Barricade, CPF 3, Responder, PVC, neoprene, butyl rubber

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user’s risk assessment.

#### 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.

#### Skin protection

Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.

#### 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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
**Section 9. Physical and chemical properties**

A. **Appearance**
   - **Physical state**: Liquid.
   - **Colour**: Yellowish-brown.

B. **Odour**: Characteristic.

C. **Odour threshold**: Not available.

D. **pH**: Not applicable.

E. **Melting/freezing point**: Not applicable.

F. **Boiling point/boiling range**: Lowest known value: 119°C (246.2°F) (butan-1-ol). Weighted average: 131.86°C (269.3°F)
   - **Flash point**: Closed cup: 33°C (91.4°F)
   - **Burning time**: Not applicable.
   - **Burning rate**: Not applicable.

G. **Evaporation rate**: Highest known value: 0.84 (ethylbenzene) Weighted average: 0.7 compared with butyl acetate

H. **Flammability (solid, gas)**: Not available.

I. **Lower and upper explosive (flammable) limits**: 0.8 - 11.3%

J. **Viscosity**: Kinematic (40°C (104°F)): >0.205 cm²/s (>20.5 mm²/s)

K. **Vapour pressure**: Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.88 kPa (6.6 mm Hg) (at 20°C)

L. **Solubility**
   - Insoluble in the following materials: cold water and hot water.

M. **Vapour density**: Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.43 (Air = 1)

N. **Relative density**: 0.97 g/cm³

O. **Partition coefficient: n-octanol/water**: Not available.

P. **Auto-ignition temperature**: Lowest known value: 355°C (671°F) (butan-1-ol).

Q. **Decomposition temperature**: Not available.

R. **SADT**: Not available.

S. **Molecular weight**: Not applicable.

**Section 10. Stability and reactivity**

A. **Chemical stability**: The product is stable.

B. **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.

C. **Conditions to avoid**: 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.

D. **Incompatible materials**: Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalies, strong acids.

E. **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Date of issue/Date of revision: 27.03.2019
Section 11. Toxicological information

A. Information on likely routes of exposure

Potential acute health effects

Inhalation: May cause respiratory irritation.

Ingestion: No known significant effects or critical hazards.

Skin contact: Causes skin irritation.

Eye contact: Causes serious eye damage.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

Ingestion: Adverse symptoms may include the following:
- stomach pains

Skin contact: Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur

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

B. Health hazards

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>20 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4300 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>TDLo Dermal</td>
<td>Rabbit</td>
<td>4300 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>790 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>butan-1-ol</td>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>4000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>2,4,6-tris (dimethylaminomethyl) phenol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1673 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>1,2-Diaminoethane</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>7 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>730 uL/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1200 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4,6-tris (dimethylaminomethyl) phenol</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 50 Micrograms</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rat</td>
<td>-</td>
<td>0.025 Milliliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rat</td>
<td>-</td>
<td>0.25 Milliliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 2 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Date of issue/Date of revision: 27.03.2019
Section 11. Toxicological information

Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>butan-1-ol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation and Narcotic effects</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethylbenzene</td>
<td>Category 2</td>
<td>Not determined</td>
<td>hearing organs</td>
</tr>
</tbody>
</table>

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Potential chronic health effects

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

ATE value

<table>
<thead>
<tr>
<th>Route</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>4995.4 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>5592.1 mg/kg</td>
</tr>
<tr>
<td>Inhalation (vapours)</td>
<td>50.14 mg/l</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

A. Aquatic and terrestrial toxicity

Ecotoxicity: No known significant effects or critical hazards.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethylbenzene</td>
<td>Acute EC50 7.2 mg/l</td>
<td>Algae</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2.93 mg/l</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4.2 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

B. Persistence and degradability
Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

C. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>3.12</td>
<td>8.1 to 25.9</td>
<td>low</td>
</tr>
<tr>
<td>butan-1-ol</td>
<td>1</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>3.6</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>2,4,6-tris (dimethylaminomethyl) phenol</td>
<td>0.219</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>1,2-Diaminoethane</td>
<td>-7.02</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

D. Mobility in soil

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

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

Section 13. Disposal considerations

A. 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.

B. Disposal precautions: 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

<table>
<thead>
<tr>
<th></th>
<th>UN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
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<tr>
<td>A. UN number</td>
<td>1263</td>
<td>1263</td>
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<tr>
<td>B. UN proper shipping name</td>
<td>Paint</td>
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<td>C. Transport hazard class(es)</td>
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<td>D. Packing group</td>
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<td>E. Environmental hazards</td>
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<td>No.</td>
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<td>F. Additional information</td>
<td>Tunnel restriction code: (D/E)</td>
<td>Emergency schedules (EmS)</td>
<td>-</td>
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<td>F-E, S-E</td>
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</tr>
</tbody>
</table>

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Section 14. Transport information

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.
- IMDG: Viscous substance. Transport in accordance with paragraph 2.3.2.5 (applicable to receptacles < 30 litre capacity).

Transport in accordance with ADR/RID, IMDG/IMO and ICAO/IATA and national regulation.

Section 15. Regulatory information

A. Regulation according to ISHA
   - ISHA article 37 (Harmful substances prohibited from manufacture): None of the components are listed.
   - ISHA article 38 (Harmful substances requiring permission): None of the components are listed.

B. Regulation according to AREC & CCA
   - AREC Toxic chemicals: Not applicable
   - AREC Article 32 (Banned): None of the components are listed.
   - AREC Article 32 (Restricted): None of the components are listed.
   - AREC Article 17 (TRI): The following components are listed: Xylene; Ethylbenzene
   - Korea inventory: Not determined.

C. Dangerous Materials Safety Management Act
   - Class: Class 4 - Flammable Liquid
     - Item: 4. Class 2 petroleums - Water-insoluble liquid
       - Threshold: 1000 L
       - Danger category: III
       - Signal word: Contact with sources of ignition prohibited

D. Wastes regulation
   - Dispose of contents and container in accordance with all local, regional, national and international regulations.

E. Regulation according to other foreign laws
   - Europe inventory: Not determined.
   - United States inventory (TSCA 8b): Not determined.
   - Japan inventory: Japan inventory (ENCS): Not determined.
     - Japan inventory (ISHL): Not determined.
   - Safety, health and environmental regulations specific for the product: No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

A. References: Not available.
B. Date of issue/Date of revision: 27.03.2019
C. Version: 1.01
   - Date of printing: 27.03.2019
D. Other
   - Indicates information that has changed from previously issued version.
Section 16. Other information

**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  
UN = United Nations

**Notice to reader**

The information in this document is given to the best of Jotun’s knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun’s control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.

**Date of issue/Date of revision:** 27.03.2019