

**SAFETY DATA SHEET****Penguard FC Comp A****SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

|                                      |                      |
|--------------------------------------|----------------------|
| <b>Product name</b>                  | : Penguard FC Comp A |
| <b>Product code</b>                  | : 2280               |
| <b>Product description</b>           | : Paint.             |
| <b>Product type</b>                  | : Liquid.            |
| <b>Other means of identification</b> | : Not available.     |

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Use in coatings - Industrial use

See Annex to the Safety data sheet for additional information in the Exposure Scenario(s).

**1.3 Details of the supplier of the safety data sheet**

Jotun Paints (Europe) Ltd.  
Stather Road  
Flixborough, Scunthorpe  
North Lincolnshire  
DN15 8RR  
England

Tel: +44 17 24 40 00 00  
Fax: +44 17 24 40 01 00  
SDSJotun@jotun.com

**1.4 Emergency telephone number**

Contact NHS Direct; phone 0845 4647 or 111. Open 24/7.

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

**Product definition** : Mixture

**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Flam. Liq. 3, H226  
Skin Irrit. 2, H315  
Eye Dam. 1, H318  
Skin Sens. 1, H317  
STOT SE 3, H335  
Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.  
See Section 11 for more detailed information on health effects and symptoms.

**2.2 Label elements**

**Hazard pictograms** :



**Signal word** : Danger.

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Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

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**SECTION 2: Hazards identification**

- Hazard statements** : H226 - Flammable liquid and vapour.  
H318 - Causes serious eye damage.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H335 - May cause respiratory irritation.  
H412 - Harmful to aquatic life with long lasting effects.
  
- Precautionary statements**

  - General** : Not applicable.
  - Prevention** : P261 - Avoid breathing vapour.  
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.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.
  - Response** : P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P333 + P313 - If skin irritation or rash occurs: Get medical 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 physician.
  - Storage** : P403 - Store in a well-ventilated place.  
P235 - Keep cool.
  - Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
  - Hazardous ingredients** : epoxy resin (MW 700-1200)  
xylene  
hydrocarbons, C9, aromatics, (<0.1% Benzene)  
butan-1-ol  
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
  - Supplemental label elements** : Not applicable.
  - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.
  - Special packaging requirements**

    - Containers to be fitted with child-resistant fastenings** : Not applicable.
    - Tactile warning of danger** : Not applicable.

  
- 2.3 Other hazards**

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

**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures** : Mixture

Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

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**SECTION 3: Composition/information on ingredients**

| Product/ingredient name  | Identifiers  | Weight %  | Regulation (EC) No. 1272/2008 [CLP]   | Type    |
|--|--|-----------|---|---------|
| epoxy resin (MW 700-1200)  | CAS: 25036-25-3  | ≥10 - ≤25 | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Skin Sens. 1, H317   | [1]     |
| xylene   | REACH #:<br>01-2119488216-32<br>EC: 215-535-7<br>CAS: 1330-20-7<br>Index: 601-022-00-9 | ≥10 - ≤25 | Flam. Liq. 3, H226<br>Acute Tox. 4, H312<br>Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Asp. Tox. 1, H304 | [1] [2] |
| hydrocarbons, C9, aromatics, (<0.1% Benzene)   | REACH #:<br>01-2119455851-35<br>EC: 918-668-5<br>CAS: 64742-95-6                       | ≤10       | Flam. Liq. 3, H226<br>STOT SE 3, H335<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411  | [1] [2] |
| butan-1-ol   | REACH #:<br>01-2119484630-38<br>EC: 200-751-6<br>CAS: 71-36-3<br>Index: 603-004-00-6   | ≤5        | Flam. Liq. 3, H226<br>Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>STOT SE 3, H335<br>STOT SE 3, H336                           | [1] [2] |
| ethylbenzene   | REACH #:<br>01-2119489370-35<br>EC: 202-849-4<br>CAS: 100-41-4<br>Index: 601-023-00-4  | ≤5        | Flam. Liq. 2, H225<br>Acute Tox. 4, H332<br>STOT RE 2, H373 (hearing organs)<br>Asp. Tox. 1, H304<br>Skin Irrit. 2, H315<br>Skin Sens. 1B, H317     | [1] [2] |
| Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.   | REACH #:<br>01-2119485289-22<br>EC: 271-846-8<br>CAS: 68609-97-2<br>CAS: 398475-96-2   | ≤5        | Skin Irrit. 2, H315<br>Skin Sens. 1B, H317  | [1]     |
| 2-Propenoic acid, 2-ethylhexylester, reaction products with ethylenediamine-ethylenimine polymer, compds. with polyethylene-polypropylene glycol mono-Bu ether phosphate |  | ≤3        | Eye Irrit. 2, H319<br>Aquatic Chronic 2, H411   | [1]     |
| benzyl alcohol   | REACH #:<br>01-2119492630-38<br>EC: 202-859-9<br>CAS: 100-51-6                         | ≤3        | Acute Tox. 4, H302<br>Acute Tox. 4, H332<br>Eye Irrit. 2, H319  | [1]     |
|  |  |           | <b>See Section 16 for the full text of the H statements declared above.</b>   |         |

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

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

Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

**Penguard FC Comp A****SECTION 4: First aid measures****4.1 Description of first aid measures**

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- 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 recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
- 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.

**4.2 Most important symptoms and effects, both acute and delayed**

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

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

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

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains epoxy resin (MW 700-1200), Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.. May produce an allergic reaction.

**4.3 Indication of any immediate medical attention and special treatment needed**

- 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.

See toxicological information (Section 11)

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

- Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO<sub>2</sub>, powders, water spray.
- Unsuitable extinguishing media** : Do not use water jet.

**5.2 Special hazards arising from the substance or mixture**

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**Penguard FC Comp A****SECTION 5: Firefighting measures**

- Hazards from the substance or mixture** : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Hazardous combustion products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

**5.3 Advice for firefighters**

- Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.
- Special protective equipment for fire-fighters** : Appropriate breathing apparatus may be required.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.
- For emergency responders** : 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".

**6.2 Environmental precautions**

- : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

**6.3 Methods and material for containment and cleaning up**

- : 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). Preferably clean with a detergent. Avoid using solvents.

**6.4 Reference to other sections**

- : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

**SECTION 7: Handling and storage**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**7.1 Precautions for safe handling**

- Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits.
- In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.
- Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type.
- Keep away from heat, sparks and flame. No sparking tools should be used.
- Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.
- Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
- Put on appropriate personal protective equipment (see Section 8).
- Never use pressure to empty. Container is not a pressure vessel.
- Always keep in containers made from the same material as the original one.
- Comply with the health and safety at work laws.
- Do not allow to enter drains or watercourses.

**Information on fire and explosion protection**

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed

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**SECTION 7: Handling and storage**

respirator during the spraying process and until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations.

**Notes on joint storage**

Keep away from: oxidising agents, strong alkalis, strong acids.

**Additional information on storage conditions**

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

**7.3 Specific end use(s)**

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

**SECTION 8: Exposure controls/personal protection**

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**8.1 Control parameters**

**Occupational exposure limits**

| Product/ingredient name                      | Exposure limit values   |
|--|---|
| xylene                                       | <b>EH40/2005 WELs (United Kingdom (UK), 8/2018). Absorbed through skin.</b><br>STEL: 441 mg/m <sup>3</sup> 15 minutes.<br>STEL: 100 ppm 15 minutes.<br>TWA: 220 mg/m <sup>3</sup> 8 hours.<br>TWA: 50 ppm 8 hours.  |
| hydrocarbons, C9, aromatics, (<0.1% Benzene) | <b>EH40-WEL (United Kingdom (UK), 12/2011). Absorbed through skin.</b><br>TWA: 200 mg/m <sup>3</sup> 8 hours. Form: All forms<br>TWA: 40 ppm 8 hours. Form: All forms   |
| butan-1-ol                                   | <b>EH40/2005 WELs (United Kingdom (UK), 8/2018). Absorbed through skin.</b><br>STEL: 154 mg/m <sup>3</sup> 15 minutes.<br>STEL: 50 ppm 15 minutes.  |
| ethylbenzene                                 | <b>EH40/2005 WELs (United Kingdom (UK), 8/2018). Absorbed through skin.</b><br>STEL: 552 mg/m <sup>3</sup> 15 minutes.<br>STEL: 125 ppm 15 minutes.<br>TWA: 100 ppm 8 hours.<br>TWA: 441 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 monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**DNELs/DMELs**

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**SECTION 8: Exposure controls/personal protection**

| Product/ingredient name                      | Exposure              | Value                   | Population | Effects  |
|--|-----------------------|-------------------------|------------|----------|
| xylene                                       | Short term Inhalation | 289 mg/m <sup>3</sup>   | Workers    | Systemic |
|  | Short term Inhalation | 289 mg/m <sup>3</sup>   | Workers    | Local    |
|  | Long term Dermal      | 180 mg/kg bw/day        | Workers    | Systemic |
|  | Long term Inhalation  | 77 mg/m <sup>3</sup>    | Workers    | Systemic |
|  | Long term Dermal      | 108 mg/kg bw/day        | Consumers  | Systemic |
|  | Long term Inhalation  | 14.8 mg/m <sup>3</sup>  | Consumers  | Systemic |
|  | Long term Oral        | 1.6 mg/kg bw/day        | Consumers  | Systemic |
| hydrocarbons, C9, aromatics, (<0.1% Benzene) | Long term Dermal      | 25 mg/kg bw/day         | Workers    | Systemic |
|  | Long term Inhalation  | 150 mg/m <sup>3</sup>   | Workers    | Systemic |
|  | Long term Dermal      | 11 mg/kg bw/day         | Consumers  | Systemic |
|  | Long term Inhalation  | 32 mg/m <sup>3</sup>    | Consumers  | Systemic |
|  | Long term Oral        | 11 mg/kg bw/day         | Consumers  | Systemic |
| butan-1-ol                                   | Long term Inhalation  | 310 mg/m <sup>3</sup>   | Workers    | Local    |
|  | Long term Oral        | 3.125 mg/kg bw/day      | Consumers  | Systemic |
|  | Long term Inhalation  | 55 mg/m <sup>3</sup>    | Consumers  | Local    |
| ethylbenzene                                 | Short term Inhalation | 293 mg/m <sup>3</sup>   | Workers    | Local    |
|  | Long term Dermal      | 180 mg/kg bw/day        | Workers    | Systemic |
|  | Long term Inhalation  | 77 mg/m <sup>3</sup>    | Workers    | Systemic |
|  | Long term Inhalation  | 15 mg/m <sup>3</sup>    | Consumers  | Systemic |
|  | Long term Oral        | 1.6 mg/kg bw/day        | Consumers  | Systemic |
| benzyl alcohol                               | Short term Inhalation | 450 mg/m <sup>3</sup>   | Workers    | Systemic |
|  | Long term Inhalation  | 90 mg/m <sup>3</sup>    | Workers    | Systemic |
|  | Short term Dermal     | 47 mg/kg bw/day         | Workers    | Systemic |
|  | Long term Dermal      | 9.5 mg/kg bw/day        | Workers    | Systemic |
|  | Short term Dermal     | 28.5 mg/kg bw/day       | Consumers  | Systemic |
|  | Short term Oral       | 25 mg/kg bw/day         | Consumers  | Systemic |
|  | Long term Dermal      | 5.7 mg/kg bw/day        | Consumers  | Systemic |
|  | Long term Oral        | 5 mg/kg bw/day          | Consumers  | Systemic |
|  | Long term Inhalation  | 8.11 mg/m <sup>3</sup>  | Consumers  | Systemic |
|  | Short term Inhalation | 40.55 mg/m <sup>3</sup> | Consumers  | Systemic |

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**Penguard FC Comp A****SECTION 8: Exposure controls/personal protection****PNECs**

| Product/ingredient name | Compartment Detail     | Value            | Method Detail |
|-------------------------|------------------------|------------------|---------------|
| xylene                  | Fresh water            | 0.327 mg/l       | -             |
|                         | Marine                 | 0.327 mg/l       | -             |
|                         | Sewage Treatment Plant | 6.58 mg/l        | -             |
|                         | Fresh water sediment   | 12.46 mg/kg dwt  | -             |
|                         | Marine water sediment  | 12.46 mg/kg dwt  | -             |
| butan-1-ol              | Soil                   | 2.31 mg/kg dwt   | -             |
|                         | Fresh water            | 0.082 mg/l       | -             |
|                         | Marine                 | 0.0082 mg/l      | -             |
|                         | Sewage Treatment Plant | 2476 mg/l        | -             |
|                         | Fresh water sediment   | 0.178 mg/kg dwt  | -             |
| ethylbenzene            | Marine water sediment  | 0.0178 mg/kg dwt | -             |
|                         | Soil                   | 0.015 mg/kg dwt  | -             |
|                         | Fresh water            | 0.1 mg/l         | -             |
|                         | Marine                 | 0.01 mg/l        | -             |
|                         | Sewage Treatment Plant | 9.6 mg/l         | -             |
| benzyl alcohol          | Fresh water sediment   | 13.7 mg/kg dwt   | -             |
|                         | Soil                   | 2.68 mg/kg dwt   | -             |
|                         | Secondary Poisoning    | 20 mg/kg         | -             |
|                         | Fresh water            | 1 mg/l           | -             |
|                         | Marine                 | 0.1 mg/l         | -             |
|                         | Sewage Treatment Plant | 39 mg/l          | -             |
|                         | Fresh water sediment   | 5.27 mg/kg dwt   | -             |
|                         | Marine water sediment  | 0.527 mg/kg dwt  | -             |
|                         | Soil                   | 0.456 mg/kg dwt  | -             |

**8.2 Exposure controls**

**Appropriate engineering controls** : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn.

**Individual protection measures**

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

**Eye/face protection** : Use safety eyewear designed to protect against splash of liquids.

**Skin protection****Gloves**

: 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.



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**Penguard FC Comp A****SECTION 8: Exposure controls/personal protection**

Wear suitable gloves tested to EN374.

Not recommended, gloves(breakthrough time) &lt; 1 hour: PE

Recommended, gloves(breakthrough time) &gt; 8 hours: Teflon, Viton®, 4H, nitrile rubber

May be used, gloves(breakthrough time) 4 - 8 hours: Barricade, CPF 3, Responder, butyl rubber, PVC, neoprene, polyvinyl alcohol (PVA)

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** : Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.
- 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** : 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.
- Environmental exposure controls** : Do not allow to enter drains or watercourses.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****Appearance**

- Physical state** : Liquid.
- Colour** : Various
- Odour** : Characteristic.
- Odour threshold** : Not applicable.
- pH** : Not applicable.
- Melting point/freezing point** : Not applicable.
- Initial boiling point and boiling range** : Lowest known value: 119°C (246.2°F) (butan-1-ol). Weighted average: 143.57°C (290.4°F)
- Flash point** : Closed cup: 28°C
- Evaporation rate** : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.68 compared with butyl acetate
- Flammability (solid, gas)** : Not applicable.
- Upper/lower flammability or explosive limits** : 0.8 - 13%
- Vapour pressure** : Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.78 kPa (5.85 mm Hg) (at 20°C)
- Vapour density** : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.47 (Air = 1)
- Density** : 1.353 to 1.549 g/cm<sup>3</sup>
- Solubility(ies)** : Insoluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/ water** : Not available.
- Auto-ignition temperature** : Lowest known value: 280 to 470°C (536 to 878°F) (Solvent naphtha (petroleum), light arom.).
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C): >0.205 cm<sup>2</sup>/s (>20.5 mm<sup>2</sup>/s)

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**Penguard FC Comp A****SECTION 9: Physical and chemical properties****Explosive properties** : Not available.**Oxidising properties** : Not available.**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity****10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.**10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.**10.4 Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products.**10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.**10.6 Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

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

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

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

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains epoxy resin (MW 700-1200), Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.. May produce an allergic reaction.

**Acute toxicity**

| Product/ingredient name                        | Result                 | Species              | Dose        | Exposure    |         |
|--|------------------------|----------------------|-------------|-------------|---------|
| xylene   | LC50 Inhalation Vapour | Rat                  | 20 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 Gas. | Rabbit      | 4000 ppm    | 4 hours |
|  |                        | LD50 Dermal          | Rabbit      | >5000 mg/kg | -       |
| Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | LD50 Oral              | Rat                  | 3500 mg/kg  | -           |         |
|  | LD50 Oral              | Rat                  | 17100 mg/kg | -           |         |
| benzyl alcohol                                 | LD50 Oral              | Rat                  | 1230 mg/kg  | -           |         |

**Conclusion/Summary** : Not available.**Acute toxicity estimates**

Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

**Penguard FC Comp A**

**SECTION 11: Toxicological information**

| Route                | ATE value     |
|----------------------|---------------|
| Oral                 | 10830.7 mg/kg |
| Dermal               | 9697 mg/kg    |
| Inhalation (vapours) | 68.22 mg/l    |

**Irritation/Corrosion**

| Product/ingredient name                        | Result                   | Species | Score | Exposure                 | Observation |
|--|--------------------------|---------|-------|--------------------------|-------------|
| Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | Skin - Moderate irritant | Rabbit  | -     | 24 hours 500 microliters | -           |

**Conclusion/Summary** : Not available.

**Sensitisation**

**Conclusion/Summary** : Not available.

**Mutagenicity**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

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

| Product/ingredient name                      | Category   | Route of exposure | Target organs                                     |
|--|------------|-------------------|---|
| xylene                                       | Category 3 | Not applicable.   | Respiratory tract irritation                      |
| hydrocarbons, C9, aromatics, (<0.1% Benzene) | Category 3 | Not applicable.   | Respiratory tract irritation and Narcotic effects |
| butan-1-ol                                   | Category 3 | Not applicable.   | Respiratory tract irritation and Narcotic effects |

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

| Product/ingredient name | Category   | Route of exposure | Target organs  |
|-------------------------|------------|-------------------|----------------|
| ethylbenzene            | Category 2 | Not determined    | hearing organs |

**Aspiration hazard**

| Product/ingredient name                      | Result                         |
|--|--------------------------------|
| xylene                                       | ASPIRATION HAZARD - Category 1 |
| hydrocarbons, C9, aromatics, (<0.1% Benzene) | ASPIRATION HAZARD - Category 1 |
| ethylbenzene                                 | ASPIRATION HAZARD - Category 1 |

**Other information** : Not available.

Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

**Penguard FC Comp A**

**SECTION 12: Ecological information**

**12.1 Toxicity**

There are no data available on the mixture itself.  
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

| Product/ingredient name                      | Result               | Species | Exposure |
|--|----------------------|---------|----------|
| hydrocarbons, C9, aromatics, (<0.1% Benzene) | Acute EC50 <10 mg/l  | Daphnia | 48 hours |
| ethylbenzene                                 | Acute IC50 <10 mg/l  | Algae   | 72 hours |
|  | Acute LC50 <10 mg/l  | Fish    | 96 hours |
|  | Acute EC50 7.2 mg/l  | Algae   | 48 hours |
|  | Acute EC50 2.93 mg/l | Daphnia | 48 hours |
|  | Acute LC50 4.2 mg/l  | Fish    | 96 hours |

**Conclusion/Summary** : This material is harmful to aquatic life with long lasting effects.

**12.2 Persistence and degradability**

**Conclusion/Summary** : Not available.

| Product/ingredient name                      | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| xylene                                       | -                 | -          | Readily          |
| hydrocarbons, C9, aromatics, (<0.1% Benzene) | -                 | -          | Not readily      |
| ethylbenzene                                 | -                 | -          | Readily          |
| benzyl alcohol                               | -                 | -          | Readily          |

**12.3 Bioaccumulative potential**

| Product/ingredient name                        | LogP <sub>ow</sub> | BCF         | Potential |
|--|--------------------|-------------|-----------|
| xylene   | 3.12               | 8.1 to 25.9 | low       |
| hydrocarbons, C9, aromatics, (<0.1% Benzene)   | -                  | 10 to 2500  | high      |
| butan-1-ol                                     | 1                  | -           | low       |
| ethylbenzene                                   | 3.6                | -           | low       |
| Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. | 3.77               | 160 to 263  | low       |
| benzyl alcohol                                 | 0.87               | <100        | low       |

**12.4 Mobility in soil**

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

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

**PBT** : Not applicable.

**vPvB** : Not applicable.

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

Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

**Penguard FC Comp A**

**SECTION 13: Disposal considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**13.1 Waste treatment methods**

**Product**

**Methods of disposal** : 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.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

**Disposal considerations** : Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

**European waste catalogue (EWC)** : 08 01 11\* Waste paint and varnish containing organic solvents or other dangerous substances

**Packaging**





**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Disposal considerations** : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

|   |           |   |
|---|-----------|---|
| <b>Type of packaging</b><br>CEPE Paint Guidelines | 15 01 10* | <b>European waste catalogue (EWC)</b><br>packaging containing residues of or contaminated by hazardous substances |
|---|-----------|---|

**Special 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**

|  | <b>ADR/RID</b>   | <b>ADN</b>   | <b>IMDG</b>   | <b>IATA</b>  |
|--|--|--|---|--|
| <b>14.1 UN number</b>                  | 1263   | 1263   | 1263  | 1263   |
| <b>14.2 UN proper shipping name</b>    | Paint  | Paint  | Paint   | Paint  |
| <b>14.3 Transport hazard class(es)</b> | 3<br> | 3<br> | 3<br> | 3<br> |
| <b>14.4 Packing group</b>              | III  | III  | III   | III  |
|  |  |  |   |  |

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**SECTION 14: Transport information**

| 14.5 Environmental hazards    | No.  | Yes.  | No.  | No. |
|-------------------------------|--|---|--|-----|
| <b>Additional information</b> | Tunnel restriction code: (D/E)<br>Hazard identification number: 30<br>Special provisions: 640E | The product is only regulated as an environmentally hazardous substance when transported in tank vessels. | <b>Emergency schedules (EmS)</b><br>F-E, S-E | -   |

**14.6 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.

**ADR / RID** : ADR/RID: Viscous substance. Not restricted, ref. chapter 2.2.3.1.5 (applicable to receptacles < 450 litre capacity).

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

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** : Not applicable.

**SECTION 15: Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**EU Regulation (EC) No. 1907/2006 (REACH)**

**Annex XIV - List of substances subject to authorisation**

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Other EU regulations**

**VOC** : The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

**VOC for Ready-for-Use Mixture** : Not available.

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

**Ozone depleting substances (1005/2009/EU)**

Not listed.

**Prior Informed Consent (PIC) (649/2012/EU)**

Not listed.

**Seveso Directive**

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

**National regulations**

Conforms to Regulation (EC) No. 453/2010 (REACH), Annex II, as amended by Regulation (EU) No. 2015/830

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**SECTION 15: Regulatory information**

**Industrial use** : The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

[International regulations](#)

[Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

[Montreal Protocol \(Annexes A, B, C, E\)](#)

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.

**15.2 Chemical safety assessment** : Not applicable.

**SECTION 16: Other information**

✔ Indicates information that has changed from previously issued version.

**Abbreviations and acronyms**

- : ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

[Procedure used to derive the classification according to Regulation \(EC\) No. 1272/2008 \[CLP/GHS\]](#)

| Classification  | Justification   |
|---|---|
| Flam. Liq. 3, H226<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>STOT SE 3, H335<br>Aquatic Chronic 3, H412 | On basis of test data<br>Calculation method<br>Calculation method<br>Calculation method<br>Calculation method<br>Calculation method |

[Full text of abbreviated H statements](#)

|      |  |
|------|--|
| H225 | Highly flammable liquid and vapour.                      |
| H226 | Flammable liquid and vapour.                             |
| H302 | Harmful if swallowed.                                    |
| H304 | May be fatal if swallowed and enters airways.            |
| H312 | Harmful in contact with skin.                            |
| H315 | Causes skin irritation.                                  |
| H317 | May cause an allergic skin reaction.                     |
| H318 | Causes serious eye damage.                               |
| H319 | Causes serious eye irritation.                           |
| H332 | Harmful if inhaled.                                      |
| H335 | May cause respiratory irritation.                        |
| H336 | May cause drowsiness or dizziness.                       |
| H373 | May cause damage to organs through prolonged or repeated |

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**SECTION 16: Other information**

|              |   |
|--------------|---|
| H411<br>H412 | exposure.<br>Toxic to aquatic life with long lasting effects.<br>Harmful to aquatic life with long lasting effects. |
|--------------|---|

**Full text of classifications [CLP/GHS]**

|                         |  |
|-------------------------|--|
| Acute Tox. 4, H302      | ACUTE TOXICITY (oral) - Category 4   |
| Acute Tox. 4, H312      | ACUTE TOXICITY (dermal) - Category 4   |
| Acute Tox. 4, H332      | ACUTE TOXICITY (inhalation) - Category 4   |
| Aquatic Chronic 2, H411 | LONG-TERM AQUATIC HAZARD - Category 2  |
| Aquatic Chronic 3, H412 | LONG-TERM AQUATIC HAZARD - Category 3  |
| Asp. Tox. 1, H304       | ASPIRATION HAZARD - Category 1   |
| Eye Dam. 1, H318        | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1   |
| Eye Irrit. 2, H319      | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2   |
| Flam. Liq. 2, H225      | FLAMMABLE LIQUIDS - Category 2   |
| Flam. Liq. 3, H226      | FLAMMABLE LIQUIDS - Category 3   |
| Skin Irrit. 2, H315     | SKIN CORROSION/IRRITATION - Category 2   |
| Skin Sens. 1, H317      | SKIN SENSITISATION - Category 1  |
| Skin Sens. 1B, H317     | SKIN SENSITISATION - Category 1B   |
| STOT RE 2, H373         | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2                              |
| STOT SE 3, H335         | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 |
| STOT SE 3, H336         | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3             |

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**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.





## Penguard FC Comp A

### Exposure Scenario: Use in coatings - Industrial use

|                                     |                                |
|-------------------------------------|--------------------------------|
| Sector of Use                       | : Industrial use               |
| Process Category                    | : PROC05 PROC07 PROC08a PROC10 |
| Environmental release category(ies) | : ERC4                         |

Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

### Operational conditions and risk management measures

#### Control of worker exposure

|                                    |   |
|------------------------------------|---|
| Frequency and duration of use      | : Covers daily exposures up to 8 hours  |
| General - Operational conditions   | : Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented  |
| General - Risk management measures | : Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection. See Section 8 for information on appropriate personal protective equipment. |

#### Type of activity or process Risk management measures

|   |   |
|---|---|
| Preparation of material for application | : Provide a good standard of controlled ventilation (10 to 15 air changes per hour).  |
| Roller, spreader, flow application      | : Provide extract ventilation to points where emissions occur.  |
| Spraying - Manual                       | : Carry out in a vented booth provided with laminar airflow.<br>or<br>Provide a good standard of controlled ventilation (10 to 15 air changes per hour). and Wear a respirator conforming to EN140 with type A/P2 filter or better. |

#### Control of environmental exposure

|   |  |
|---|--|
| Organisational measures to prevent/limit release from site                  | : Prevent environmental discharge consistent with regulatory requirements.   |
| Conditions and measures related to external treatment of waste for disposal | : External treatment and disposal of waste should comply with applicable local and/or national regulations. See Section 13 for additional waste treatment information. |
| Conditions and measures related to external recovery of waste               | : External recovery and recycling of waste should comply with applicable local and/or national regulations.  |

#### Additional information

|   |  |
|---|--|
| The exposure scenario for the mixture is based on the following substances: |  |
| REACH #: 01-2119488216-32   |  |



## Penguard FC Comp A

### Exposure Scenario: Use in coatings - Professional use

|                                     |                                |
|-------------------------------------|--------------------------------|
| Sector of Use                       | : Professional use             |
| Process Category                    | : PROC05 PROC08a PROC10 PROC11 |
| Environmental release category(ies) | : ERC8a ERC8d                  |

Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

### Operational conditions and risk management measures

#### Control of worker exposure

|                                    |   |
|------------------------------------|---|
| Frequency and duration of use      | : Covers daily exposures up to 8 hours  |
| General - Operational conditions   | : Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented  |
| General - Risk management measures | : Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection. See Section 8 for information on appropriate personal protective equipment. |

#### Type of activity or process

#### Risk management measures

|   |  |
|---|--|
| Preparation of material for application - Indoor  | : Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.<br>or<br>Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Wear a respirator conforming to EN140 with type A/P2 filter or better. |
| Preparation of material for application - Outdoor | : Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour.<br>or<br>Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with type A/P2 filter or better.   |
| Equipment cleaning and maintenance                | : Drain down system prior to equipment break-in or maintenance. Avoid carrying out activities involving exposure for more than 4 hours.  |
| Roller, spreader, flow application - Indoor       | : Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Wear a respirator conforming to EN140 with type A/P2 filter or better.  |
| Roller, spreader, flow application - Outdoor      | : Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with type A/P2 filter or better.  |
| Spraying - Manual - Indoor                        | : Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Wear a respirator conforming to EN140 with type A/P2 filter or better.   |
| Spraying - Manual - Outdoor                       | : Ensure operation is undertaken outdoors. Wear a full-face respirator conforming to EN136 with Type A/P2 filter or better. Avoid carrying out activities involving exposure for more than 4 hours.  |

#### Control of environmental exposure

|   |  |
|---|--|
| Organisational measures to prevent/limit release from site                  | : Prevent environmental discharge consistent with regulatory requirements.   |
| Conditions and measures related to external treatment of waste for disposal | : External treatment and disposal of waste should comply with applicable local and/or national regulations. See Section 13 for additional waste treatment information. |
| Conditions and measures related to external recovery of waste               | : External recovery and recycling of waste should comply with applicable local and/or national regulations.  |

#### Additional information

The exposure scenario for the mixture is based on the following substances:

REACH #: 01-2119488216-32