

## Penguard Express B12 Comp A

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

|                                      |                               |
|--------------------------------------|-------------------------------|
| <b>Product name</b>                  | : Penguard Express B12 Comp A |
| <b>Product code</b>                  | : 20380                       |
| <b>Product description</b>           | : Paint.                      |
| <b>Product type</b>                  | : Liquid.                     |
| <b>Other means of identification</b> | : Not available.              |
| <b>UFI</b>                           | : 0QET-C1CD-300T-Y44C         |

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

Use in coatings - Industrial use  
Use in coatings - Professional 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

Jotun A/S  
P.O.Box 2021  
3202 Sandefjord  
Norway

Tel: + 47 33 45 70 00  
Fax: +47 33 45 72 42

SDSJotun@jotun.no

#### 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]

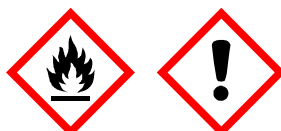
Flam. Liq. 3, H226  
Skin Irrit. 2, H315  
Eye Irrit. 2, H319  
Skin Sens. 1, H317  
Aquatic Chronic 3, H412

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** : Warning.

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**SECTION 2: Hazards identification**

- Hazard statements** : H226 - Flammable liquid and vapour.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.  
H412 - Harmful to aquatic life with long lasting effects.
- Precautionary statements**
- General** : Not applicable.
- 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** : 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 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical advice or attention.
- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazardous ingredients** : epoxy resin (MW ≤ 700)  
epoxy resin (MW 700-1200)  
butan-1-ol  
hydrocarbons, c9-unsatd., polymd.
- Supplemental label elements** : Contains epoxy constituents. May produce an allergic reaction.  
Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
- 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**

- Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
- Other hazards which do not result in classification** : None known.

The mixture may be a skin sensitiser. It may also be a skin irritant and repeated contact may increase this effect.

**Penguard Express B12 Comp A****SECTION 3: Composition/information on ingredients****3.2 Mixtures** : Mixture

| Product/ingredient name           | Identifiers   | Weight %  | Regulation (EC) No. 1272/2008 [CLP]  | Type        |
|-----------------------------------|---|-----------|--|-------------|
| epoxy resin (MW ≤ 700)            | REACH #:<br>01-2119456619-26<br>EC: 216-823-5<br>CAS: 1675-54-3<br>Index: 603-073-00-2  | ≥10 - <25 | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Skin Sens. 1B, H317<br>Aquatic Chronic 2, H411  | [1]         |
| epoxy resin (MW 700-1200)         | CAS: 25036-25-3   | ≤5        | 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  | ≤5        | 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<br>Aquatic Chronic 3, H412 | [1] [2]     |
| titanium dioxide                  | REACH #:<br>01-2119489379-17<br>EC: 236-675-5<br>CAS: 13463-67-7<br>Index: 022-006-00-2 | ≤5        | Carc. 2, H351 (inhalation)   | [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    | <3        | 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   | ≤3        | Flam. Liq. 2, H225<br>Acute Tox. 4, H332<br>STOT RE 2, H373 (hearing organs)<br>Asp. Tox. 1, H304<br>Aquatic Chronic 3, H412   | [1] [2]     |
| hydrocarbons, c9-unsatd., polymd. | REACH #:<br>01-2119555292-40<br>EC: 701-299-7<br>CAS: 71302-83-5                        | ≤3        | Skin Sens. 1, H317<br>Aquatic Chronic 3, H412  | [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

[6] Additional disclosure due to company policy

[\*] The classification as a carcinogen by inhalation applies only to mixtures placed on the market in powder form containing 1% or more of titanium dioxide particles with diameter ≤ 10 µm not bound within a matrix.

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

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**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** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use 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. 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. 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. Ingestion may cause nausea, diarrhea and vomiting.

**Over-exposure signs/symptoms**

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

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

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

**Penguard Express B12 Comp A****SECTION 7: Handling and storage**

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 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), 1/2020). 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.  |
| butan-1-ol              | <b>EH40/2005 WELs (United Kingdom (UK), 1/2020). 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), 1/2020). 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            |          |
|-------------------------|-----------------------|-------------------------|--------------------------------|--------------------|----------|
| epoxy resin (MW ≤ 700)  | Short term Dermal     | 8.33 mg/kg bw/day       | Workers                        | Systemic           |          |
|                         | Short term Inhalation | 12.25 mg/m <sup>3</sup> | Workers                        | Systemic           |          |
|                         | Long term Dermal      | 8.33 mg/kg bw/day       | Workers                        | Systemic           |          |
|                         | Long term Inhalation  | 12.25 mg/m <sup>3</sup> | Workers                        | Systemic           |          |
|                         | Short term Dermal     | 3.571 mg/kg bw/day      | General population [Consumers] | Systemic           |          |
|                         | Short term Oral       | 0.75 mg/kg bw/day       | General population [Consumers] | Systemic           |          |
|                         | Long term Dermal      | 3.571 mg/kg bw/day      | General population [Consumers] | Systemic           |          |
|                         | Long term Oral        | 0.75 mg/kg bw/day       | General population [Consumers] | Systemic           |          |
| xylene                  | Long term Oral        | 1.6 mg/kg bw/day        | General population             | Systemic           |          |
|                         | Long term Inhalation  | 14.8 mg/m <sup>3</sup>  | General population             | Systemic           |          |
|                         | Long term Inhalation  | 77 mg/m <sup>3</sup>    | Workers                        | Systemic           |          |
|                         | Long term Dermal      | 108 mg/kg bw/day        | General population             | Systemic           |          |
|                         | Long term Dermal      | 180 mg/kg bw/day        | Workers                        | Systemic           |          |
|                         | Short term Inhalation | 289 mg/m <sup>3</sup>   | Workers                        | Local              |          |
|                         | Short term Inhalation | 289 mg/m <sup>3</sup>   | Workers                        | Systemic           |          |
|                         | Long term Inhalation  | 10 mg/m <sup>3</sup>    | Workers                        | Local              |          |
| titanium dioxide        | Long term Oral        | 700 mg/kg bw/day        | General population             | Systemic           |          |
|                         | Long term Oral        | 310 mg/m <sup>3</sup>   | Workers                        | Local              |          |
| butan-1-ol              | Long term Oral        | 3.125 mg/kg bw/day      | General population [Consumers] | Systemic           |          |
|                         | Long term Inhalation  | 55 mg/m <sup>3</sup>    | General population [Consumers] | Local              |          |
|                         | Long term Oral        | 3.125 mg/kg bw/day      | General population             | Systemic           |          |
|                         | Long term Inhalation  | 55 mg/m <sup>3</sup>    | General population             | Local              |          |
|                         | Long term Inhalation  | 310 mg/m <sup>3</sup>   | Workers                        | Local              |          |
|                         | ethylbenzene          | Long term Oral          | 1.6 mg/kg bw/day               | General population | Systemic |
|                         |                       | Long term Inhalation    | 15 mg/m <sup>3</sup>           | General population | Systemic |
|                         |                       | Long term Inhalation    | 77 mg/m <sup>3</sup>           | Workers            | Systemic |
| Long term Dermal        |                       | 180 mg/kg bw/day        | Workers                        | Systemic           |          |
| Short term              |                       | 293 mg/m <sup>3</sup>   | Workers                        | Local              |          |

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

|                                   |                                |                       |                                      |          |
|-----------------------------------|--------------------------------|-----------------------|--------------------------------------|----------|
| hydrocarbons, c9-unsatd., polymd. | Inhalation<br>Long term        | 442 mg/m <sup>3</sup> | Workers                              | Local    |
|                                   | Inhalation<br>Short term       | 884 mg/m <sup>3</sup> | Workers                              | Systemic |
|                                   | Inhalation<br>Long term Dermal | 16.4 mg/<br>kg bw/day | Workers                              | Systemic |
|                                   | Long term<br>Inhalation        | 57 mg/m <sup>3</sup>  | Workers                              | Systemic |
|                                   | Long term Dermal               | 8 mg/kg<br>bw/day     | General<br>population<br>[Consumers] | Systemic |
|                                   | Long term<br>Inhalation        | 28 mg/m <sup>3</sup>  | General<br>population<br>[Consumers] | Systemic |
|                                   | Long term Oral                 | 4 mg/kg<br>bw/day     | General<br>population<br>[Consumers] | Systemic |
|                                   | Long term Oral                 | 0.33 mg/<br>kg bw/day | General<br>population                | Systemic |
|                                   | Long term Dermal               | 1.67 mg/<br>kg bw/day | General<br>population                | Systemic |
|                                   | Long term Dermal               | 4.7 mg/kg<br>bw/day   | Workers                              | Systemic |
| Long term<br>Inhalation           | 0.58 mg/m <sup>3</sup>         | General<br>population | Systemic                             |          |
| Long term<br>Inhalation           | 3.3 mg/m <sup>3</sup>          | Workers               | Systemic                             |          |

**PNECs**

| Product/ingredient name           | Compartment Detail        | Value            | Method Detail |
|-----------------------------------|---------------------------|------------------|---------------|
| epoxy resin (MW ≤ 700)            | Fresh water               | 0.006 mg/l       | -             |
|                                   | Marine                    | 0.0006 mg/l      | -             |
|                                   | Sewage Treatment<br>Plant | 10 mg/l          | -             |
|                                   | Fresh water sediment      | 0.996 mg/l       | -             |
|                                   | Marine water sediment     | 0.0996 mg/l      | -             |
|                                   | Soil                      | 0.196 mg/l       | -             |
| xylene                            | Fresh water               | 0.327 mg/l       | -             |
|                                   | Marine                    | 0.327 mg/l       | -             |
|                                   | Sewage Treatment<br>Plant | 6.58 mg/l        | -             |
|                                   | Fresh water sediment      | 12.46 mg/kg dwt  | -             |
|                                   | Marine water sediment     | 12.46 mg/kg dwt  | -             |
|                                   | Soil                      | 2.31 mg/kg dwt   | -             |
| butan-1-ol                        | Fresh water               | 0.082 mg/l       | -             |
|                                   | Marine                    | 0.0082 mg/l      | -             |
|                                   | Sewage Treatment<br>Plant | 2476 mg/l        | -             |
|                                   | Fresh water sediment      | 0.178 mg/kg dwt  | -             |
|                                   | Marine water sediment     | 0.0178 mg/kg dwt | -             |
|                                   | Soil                      | 0.015 mg/kg dwt  | -             |
| ethylbenzene                      | Fresh water               | 0.1 mg/l         | -             |
|                                   | Marine                    | 0.01 mg/l        | -             |
|                                   | Sewage Treatment<br>Plant | 9.6 mg/l         | -             |
|                                   | Fresh water sediment      | 13.7 mg/kg dwt   | -             |
|                                   | Soil                      | 2.68 mg/kg dwt   | -             |
|                                   | Secondary Poisoning       | 20 mg/kg         | -             |
| hydrocarbons, c9-unsatd., polymd. | Fresh water               | 54 µg/l          | -             |
|                                   | Marine                    | 5.4 µg/l         | -             |
|                                   | Sewage Treatment          | 2.2 mg/l         | -             |



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

|  |                       |                 |   |
|--|-----------------------|-----------------|---|
|  | Plant                 |                 |   |
|  | Fresh water sediment  | 1584 mg/kg dwt  | - |
|  | Marine water sediment | 158 mg/kg dwt   | - |
|  | Marine water sediment | 158 mg/kg dwt   | - |
|  | Soil                  | 316.7 mg/kg dwt | - |
|  | Secondary Poisoning   | 200 mg/kg       | - |

**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** : Safety eyewear complying to EN 166 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.

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

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

**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** : Grey
- 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: 235.45°C (455.8°F)
- Flash point** : Closed cup: 31°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 - 11.3%
- Vapour pressure** : Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.31 kPa (2.33 mm Hg) (at 20°C)
- Vapour density** : Highest known value: 11.7 (Air = 1) (epoxy resin (MW ≤ 700)). Weighted average: 8.8 (Air = 1)
- Density** : 2.179 to 2.216 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: 355°C (671°F) (butan-1-ol).
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C): >20.5 mm<sup>2</sup>/s (>20.5 cSt)
- 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.

**Penguard Express B12 Comp A****SECTION 10: Stability and reactivity**

**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. 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. Ingestion may cause nausea, diarrhea and vomiting.

**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        | 20 mg/l     | 4 hours  |
|                                      | LD50 Oral               | Rat        | 4300 mg/kg  | -        |
|                                      | TDL <sub>0</sub> Dermal | Rabbit     | 4300 mg/kg  | -        |
| butan-1-ol                           | LD50 Oral               | Rat        | 790 mg/kg   | -        |
| ethylbenzene                         | LC50 Inhalation Vapour  | Rat - Male | 17.8 mg/l   | 4 hours  |
|                                      | LD50 Dermal             | Rabbit     | >5000 mg/kg | -        |
|                                      | LD50 Oral               | Rat        | 3500 mg/kg  | -        |
| hydrocarbons, c9-unsatd.,<br>polymd. | LD50 Dermal             | Rat        | >2000 mg/kg | -        |
|                                      | LD50 Oral               | Rat        | >2000 mg/kg | -        |

**Acute toxicity estimates**

| Route                | ATE value      |
|----------------------|----------------|
| Oral                 | 20242.91 mg/kg |
| Dermal               | 26825.18 mg/kg |
| Inhalation (vapours) | 354.83 mg/l    |

**Irritation/Corrosion**

| Product/ingredient name   | Exposure               | Species                      | Score | Exposure               | Observation |
|---------------------------|------------------------|------------------------------|-------|------------------------|-------------|
| epoxy resin (MW ≤ 700)    | Eyes - Severe irritant | Rabbit                       | -     | 24 hours 2 milligrams  | -           |
|                           | Skin - Mild irritant   | Rabbit                       | -     | 500 milligrams         | -           |
| epoxy resin (MW 700-1200) | Skin - Mild irritant   | Mammal - species unspecified | -     | -                      | -           |
|                           | Eyes - Mild irritant   | Mammal - species unspecified | -     | -                      | -           |
| xylene                    | Eyes - Mild irritant   | Rabbit                       | -     | 87 milligrams          | -           |
|                           | Skin - Mild irritant   | Rat                          | -     | 8 hours 60 microliters | -           |
| titanium dioxide          | Skin - Mild irritant   | Human                        | -     | 72 hours               | -           |

**Sensitisation**

**Penguard Express B12 Comp A**

**SECTION 11: Toxicological information**

| Product/ingredient name           | Route of exposure | Species                      | Result      |
|-----------------------------------|-------------------|------------------------------|-------------|
| epoxy resin (MW ≤ 700)            | skin              | Mammal - species unspecified | Sensitising |
| epoxy resin (MW 700-1200)         | skin              | Mammal - species unspecified | Sensitising |
| hydrocarbons, c9-unsatd., polymd. | skin              | Mouse                        | Sensitising |

**Mutagenicity**

No known significant effects or critical hazards.

**Carcinogenicity**

No known significant effects or critical hazards.

**Reproductive toxicity**

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

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

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

| Product/ingredient 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)**

| Product/ingredient name | Category   | Route of exposure | Target organs  |
|-------------------------|------------|-------------------|----------------|
| ethylbenzene            | Category 2 | -                 | hearing organs |

**Aspiration hazard**

| Product/ingredient name | Result                         |
|-------------------------|--------------------------------|
| xylene                  | ASPIRATION HAZARD - Category 1 |
| ethylbenzene            | ASPIRATION HAZARD - Category 1 |

**Other information** : None identified.

**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                        |
|-------------------------|---|--|---------------------------------|
| 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                        |
| titanium dioxide        | Acute LC50 13400 µg/l Fresh water<br>Acute LC50 3 mg/l Fresh water  | Fish - Pimephales promelas<br>Crustaceans - Ceriodaphnia dubia - Neonate | 96 hours<br>48 hours            |
|                         | Acute LC50 6.5 mg/l Fresh water                                     | Daphnia - Daphnia pulex - Neonate  | 48 hours                        |
|                         | Acute LC50 >1000000 µg/l Marine                                     | Fish - Fundulus heteroclitus   | 96 hours                        |

**Penguard Express B12 Comp A****SECTION 12: Ecological information**

|              |   |   |                                  |
|--------------|---|---|----------------------------------|
| ethylbenzene | water<br>Acute EC50 7700 µg/l Marine water<br>Acute EC50 2.93 mg/l<br>Acute LC50 4.2 mg/l | Algae - Skeletonema costatum<br>Daphnia<br>Fish | 96 hours<br>48 hours<br>96 hours |
|--------------|---|---|----------------------------------|

This material is harmful to aquatic life with long lasting effects.

**12.2 Persistence and degradability**

Not available.

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

**12.3 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       |
| hydrocarbons, c9-unsatd.,<br>polymd. | 3.627              | -           | 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**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

**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** : Yes.

**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)**

The European Waste Catalogue classification of this product, when disposed of as waste, is:

**Penguard Express B12 Comp A**

**SECTION 13: Disposal considerations**

| Waste code | Waste designation   |
|------------|---|
| 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.

| Result          | European waste catalogue (EWC)   |
|-----------------|--|
| CEPE Guidelines | 15 01 10* 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**

|  | ADR/RID  | ADN  | IMDG  | IATA   |
|--|--|--|---|--|
| <b>14.1 UN number</b>                  | UN1263   | UN1263   | UN1263  | UN1263   |
| <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  |
| <b>14.5 Environmental hazards</b>      | No.  | Yes.   | No.   | No.  |

**Additional information**

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

**Hazard identification number** 30  
**Tunnel code** (D/E)

**ADN** : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.

**IMDG** : IMDG: Viscous substance. Transport in accordance with paragraph 2.3.2.5 (applicable to receptacles < 450 litre capacity).

**Emergency schedules** 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.

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## **SECTION 14: Transport information**

**14.7 Transport in bulk according to IMO instruments** : 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

**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

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.

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**SECTION 15: Regulatory information**

**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 Irrit. 2, H319<br>Skin Sens. 1, H317<br>Aquatic Chronic 3, H412 | On basis of test data<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.                                 |
| H351 | Suspected of causing cancer.                                       |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects.                   |
| H412 | Harmful to aquatic life with long lasting effects.                 |

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

|                   |   |
|-------------------|---|
| Acute Tox. 4      | ACUTE TOXICITY - Category 4                                     |
| Aquatic Chronic 2 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2                 |
| Aquatic Chronic 3 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3                 |
| Asp. Tox. 1       | ASPIRATION HAZARD - Category 1                                  |
| Carc. 2           | CARCINOGENICITY - Category 2                                    |
| Eye Dam. 1        | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1                  |
| Eye Irrit. 2      | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2                  |
| Flam. Liq. 2      | FLAMMABLE LIQUIDS - Category 2                                  |
| Flam. Liq. 3      | FLAMMABLE LIQUIDS - Category 3                                  |
| Skin Irrit. 2     | SKIN CORROSION/IRRITATION - Category 2                          |
| Skin Sens. 1      | SKIN SENSITISATION - Category 1                                 |
| Skin Sens. 1B     | SKIN SENSITISATION - Category 1B                                |
| STOT RE 2         | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 |
| STOT SE 3         | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3   |

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**Penguard Express B12 Comp A**

**SECTION 16: Other information**

**Date of issue/ Date of revision** : 31.01.2022

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**Version** : 3

**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 Express B12 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. 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                       | : 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. |

#### 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  
 REACH #: 01-2119456619-26

## Penguard Express B12 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. 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 per day.<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 per day.<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 per day.  |
| 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 full-face respirator conforming to EN136 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 full-face respirator conforming to EN136 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.  |

#### 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  
 REACH #: 01-2119456619-26