

## Penguard Express ZP Comp A

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

#### 1.1 Product identifier

**Product name** : Penguard Express ZP Comp A  
**Product code** : 2920  
**Product description** : Paint.  
**Product type** : Liquid.  
**Other means of identification** : Not available.

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

##### Identified uses

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

MANUFACTURER/SUPPLIER:  
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 Irrit. 2, H319  
Skin Sens. 1, H317  
Aquatic Chronic 2, H411

#### 2.2 Label elements

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

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

**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**

**Hand protection** : There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. The breakthrough time must be greater than the end use time of the product. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred. Wear suitable gloves tested to EN374. May be used, gloves(breakthrough time) 4 - 8 hours: neoprene, butyl rubber, PVC Recommended, gloves(breakthrough time) > 8 hours: Viton®, fluor rubber, 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** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

**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 charcoal filter.

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

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**Penguard Express ZP Comp A****SECTION 8: Exposure controls/personal protection****SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****Appearance**

|   |  |
|---|--|
| <b>Physical state</b>                               | : Liquid.  |
| <b>Colour</b>                                       | : Various colours.   |
| <b>Odour</b>  | : Characteristic.  |
| <b>Odour threshold</b>                              | : Not applicable.  |
| <b>pH</b>   | : Not applicable.  |
| <b>Melting point/freezing point</b>                 | : Not applicable.  |
| <b>Initial boiling point and boiling range</b>      | : Lowest known value: 120.17°C (248.3°F) (1-methoxy-2-propanol). Weighted average: 215.51°C (419.9°F)                  |
| <b>Flash point</b>                                  | : Closed cup: 32°C   |
| <b>Evaporation rate</b>                             | : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.67 compared with butyl acetate                          |
| <b>Flammability (solid, gas)</b>                    | : Not applicable.  |
| <b>Burning time</b>                                 | : Not applicable.  |
| <b>Burning rate</b>                                 | : Not applicable.  |
| <b>Upper/lower flammability or explosive limits</b> | : 0.8 - 13.74%   |
| <b>Vapour pressure</b>                              | : Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.42 kPa (3.15 mm Hg) (at 20°C) |
| <b>Vapour density</b>                               | : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.64 (Air = 1)  |
| <b>Relative density</b>                             | : 1.642 to 1.683 g/cm <sup>3</sup>   |
| <b>Solubility(ies)</b>                              | : Insoluble in the following materials: cold water and hot water.  |
| <b>Partition coefficient: n-octanol/ water</b>      | : Not available.   |
| <b>Auto-ignition temperature</b>                    | : Lowest known value: 270°C (518°F) (1-methoxy-2-propanol).  |
| <b>Decomposition temperature</b>                    | : Not available.   |
| <b>Viscosity</b>                                    | : Kinematic (40°C): >0.205 cm <sup>2</sup> /s (>20.5 mm <sup>2</sup> /s)   |
| <b>Explosive properties</b>                         | : Not available.   |
| <b>Oxidising properties</b>                         | : Not available.   |

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

|  |   |
|--|---|
| <b>10.1 Reactivity</b>                         | : No specific test data related to reactivity available for this product or its ingredients.  |
| <b>10.2 Chemical stability</b>                 | : The product is stable.  |
| <b>10.3 Possibility of hazardous reactions</b> | : Under normal conditions of storage and use, hazardous reactions will not occur.   |
| <b>10.4 Conditions to avoid</b>                | : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.   |
| <b>10.5 Incompatible materials</b>             | : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.<br>Under normal conditions of storage and use, hazardous reactions will not occur. |
| <b>10.6 Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

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**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.

Based on the properties of the epoxy constituent(s) and considering toxicological data on similar mixtures, this mixture may be a skin sensitizer and an irritant. It contains low molecular weight epoxy constituents which are irritating to eyes, mucous membrane and skin. Repeated skin contact may lead to irritation and to sensitisation, possibly with cross-sensitisation to other epoxies. Skin contact with the mixture and exposure to spray mist and vapour should be avoided.

Contains epoxy resin (MW ≤ 700), epoxy resin (MW 700-1200), hydrocarbons, C9-unsaturated, polymerized. May produce an allergic reaction.

| 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  | -        |
| ethylbenzene            | LC50 Inhalation Gas.   | Rabbit  | 4000 ppm    | 4 hours  |
|                         | LD50 Dermal            | Rabbit  | >5000 mg/kg | -        |
|                         | LD50 Oral              | Rat     | 3500 mg/kg  | -        |
| benzyl alcohol          | LD50 Oral              | Rat     | 1230 mg/kg  | -        |
|                         | LD50 Dermal            | Rabbit  | 13 g/kg     | -        |
| 1-methoxy-2-propanol    | LD50 Oral              | Rat     | 6600 mg/kg  | -        |

**Acute toxicity estimates**

| Route                | ATE value     |
|----------------------|---------------|
| Oral                 | 49200 mg/kg   |
| Dermal               | 11905.7 mg/kg |
| Inhalation (vapours) | 74.23 mg/l    |

**Irritation/Corrosion**

| Product/ingredient name | Result               | Species | Score | Exposure                | Observation |
|-------------------------|----------------------|---------|-------|-------------------------|-------------|
| 1-methoxy-2-propanol    | Eyes - Mild irritant | Rabbit  | -     | 24 hours 500 milligrams | -           |
|                         | Skin - Mild irritant | Rabbit  | -     | 500 milligrams          | -           |

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

| Product/ingredient name | Category   | Route of exposure | Target organs    |
|-------------------------|------------|-------------------|------------------|
| 1-methoxy-2-propanol    | Category 3 | Not applicable.   | Narcotic effects |

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

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

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**SECTION 11: Toxicological information**

**Aspiration hazard**

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

**Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

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

- 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.

**Potential chronic health effects**

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

**SECTION 12: Ecological information**

**12.1 Toxicity**

| Product/ingredient name     | Result                | Species                    | Exposure |
|-----------------------------|-----------------------|----------------------------|----------|
| epoxy resin (MW ≤ 700)      | Acute EC50 1.4 mg/l   | Daphnia                    | 48 hours |
|                             | Acute LC50 3.1 mg/l   | Fish - fathead minnow      | 96 hours |
|                             | Chronic NOEC 0.3 mg/l | Fish                       | 21 days  |
| trizinc bis(orthophosphate) | Acute LC50 0.14 mg/l  | Fish - Oncorhynchus mykiss | 96 hours |
|                             | Chronic NOEC 0.1 mg/l | Micro-organism             | 4 hours  |
| ethylbenzene                | 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** : Water polluting material. May be harmful to the environment if released in large quantities. This material is toxic to aquatic life with long lasting effects.

**12.2 Persistence and degradability**

**Conclusion/Summary** : Not available.

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

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**Penguard Express ZP Comp A****SECTION 12: Ecological information****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       |
| trizinc bis(orthophosphate)                  | -                  | 60960       | high      |
| ethylbenzene                                 | 3.6                | -           | low       |
| benzyl alcohol                               | 0.87               | <100        | low       |
| 1-methoxy-2-propanol                         | <1                 | -           | low       |
| hydrocarbons,<br>C9-unsaturated, polymerized | 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**

**PBT** : Not applicable.

**vPvB** : Not applicable.

**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**

Do not allow to enter drains or watercourses. Material and/or container must be disposed of as hazardous waste.

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

**SECTION 14: Transport information**

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

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

**International transport regulations**

**14.1 UN number** : 1263

**14.2 UN proper shipping name** : Paint. Marine pollutant (trizinc bis(orthophosphate), epoxy resin (MW ≤ 700))

**14.3 Transport hazard class(es)** : 3



**Marking** : The environmental hazardous / marine pollutant mark is only applicable for packages containing more than 5 litres for liquids and 5 kg for solids.

**14.4 Packing group** : III

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**Penguard Express ZP Comp A****SECTION 14: Transport information**

- 14.5 Environmental hazards** : Yes.
- 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.
- Additional information**
- ADR / RID** : Tunnel restriction code: (D/E)  
Hazard identification number: 30  
Special provisions: 640E
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- Emergency schedules (EmS)**  
F-E, S-E
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.
- IMDG Code Segregation group** :  Not available.

**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****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**

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

**Black List Chemicals** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : 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]  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

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

| Classification          | Justification         |
|-------------------------|-----------------------|
| Flam. Liq. 3, H226      | On basis of test data |
| Skin Irrit. 2, H315     | Calculation method    |
| Eye Irrit. 2, H319      | Calculation method    |
| Skin Sens. 1, H317      | Calculation method    |
| Aquatic Chronic 2, H411 | 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.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H336 May cause drowsiness or dizziness.  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.  
 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, 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 Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1  
 Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1  
 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 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  
 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2  
 STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3

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## **SECTION 16: Other information**

**Version** : 6

### **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.

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## Penguard Express ZP 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                       | : 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 ZP 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 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   |  |