SAFETY DATA SHEET

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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>SIGMACOVER 400 (SIGMACOVER 640) SEALER HARDENER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>00332041</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Product use</th>
<th>Professional applications, Used by spraying.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of the substance/mixture</td>
<td>Coating.</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet

PPG Coatings SPRL/BVBA
Tweemontstraat 104
B-2100 Deurne
Belgium
Telephone +32-33606311
Fax +32-33606435

e-mail address of person responsible for this SDS

PMC.Safety@PPG.com

1.4 Emergency telephone number

Supplier

| Telephone number                   | +31 20 4075210 |

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]

Acute Tox. 4, H302
Acute Tox. 4, H332
Skin Corr. 1B, H314
Eye Dam. 1, H318
Skin Sens. 1, H317
Carc. 2, H351
STOT SE 3, H335 (Respiratory tract irritation)
STOT RE 2, H373
Asp. Tox. 1, H304
Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown ecotoxicity: Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 9.6%
SECTION 2: Hazards identification

Classification according to Directive 1999/45/EC [DPD]
The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Carc. Cat. 3; R40
Xn; R20/21/22, R48/20, R65
C; R34
Xi; R37
R43
N; R51/53

Human health hazards : Limited evidence of a carcinogenic effect. Harmful by inhalation, in contact with skin and if swallowed. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Harmful: may cause lung damage if swallowed. Causes burns. Irritating to respiratory system. May cause sensitisation by skin contact.

Environmental hazards : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Harmful if swallowed or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Wear protective clothing. Do not breathe vapour.

Response : 
INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage : Store locked up.

Disposal : Not applicable.

Hazardous ingredients : furfuryl alcohol
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-2-(8-heptadeceny1)-4,5-dihydro-1H-imidazole-1-ethylamine
3,6-diazaoctanethylenediamin

Supplemental label elements : Not applicable.
SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

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

2.3 Other hazards

Other hazards which do not result in classification: Causes digestive tract burns. Prolonged or repeated contact may dry skin and cause irritation.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>% by weight</th>
<th>Classification</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>furfuryl alcohol</td>
<td>REACH #: 01-2119493965-18 EC: 202-626-1 CAS: 98-00-0 Index: 603-018-00-2</td>
<td>&gt;=20 - &lt;25</td>
<td>Carc. Cat. 3; R40 T; R23 Xn; R21/22, R48/20 Xi; R36/37</td>
<td>Acute Tox. 4, H302</td>
<td>[1]</td>
</tr>
<tr>
<td>Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethyl)oxy)-ω-(2-aminomethylthoxy)-</td>
<td>CAS: 9046-10-0</td>
<td>&gt;=10 - &lt;20</td>
<td>Xn; R21/22, R65 C; R34 R52/53</td>
<td>Acute Tox. 4, H302</td>
<td>[1]</td>
</tr>
<tr>
<td>Formaldehyde, polymer with 1, 3-dimethylbenzene</td>
<td>CAS: 26139-75-3</td>
<td>&gt;=10 - &lt;20</td>
<td>Xi; R36/37/38</td>
<td>Acute Tox. 4, H302</td>
<td>[1]</td>
</tr>
<tr>
<td>benzyl alcohol</td>
<td>REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6 Index: 603-057-00-5</td>
<td>&gt;=7 - &lt;25</td>
<td>Xn; R20/22</td>
<td>Acute Tox. 4, H302</td>
<td>[1]</td>
</tr>
<tr>
<td>Mixture of Cycloaliphatic Amines</td>
<td>CAS: SUB100744</td>
<td>&gt;=7 - &lt;25</td>
<td>Xn; R21</td>
<td>Acute Tox. 4, H302</td>
<td>[1]</td>
</tr>
</tbody>
</table>
SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC Number</th>
<th>CAS Number</th>
<th>Index</th>
<th>Concentration</th>
<th>Hazard Class</th>
<th>Hazard Statement</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(8-heptadecenyl)-4, 5-dihydro-1H-imidazole-1-ethylamine</td>
<td>222-551-8</td>
<td>3528-63-0</td>
<td></td>
<td>&gt;=1 - &lt;2.5</td>
<td>C; R34</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319, Skin Corr. 1C, H314</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R43 N; R50/53</td>
<td>Eye Dam. 1, H318, Skin Sens. 1, H317, Aquatic Acute 1, H400, Aquatic Chronic 1, H410</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4, H302</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TERTIARY AMINE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3, 6-diazaoctanethylenediamin</td>
<td></td>
</tr>
<tr>
<td>EC: 203-950-6</td>
<td></td>
<td>112-24-3</td>
<td>612-059-00-5</td>
<td>&gt;=1 - &lt;3</td>
<td>Xn; R21</td>
<td>Skin Corr. 1B, H314, Acute Tox. 4, H312, Skin Irrit. 2, H315</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319, Acute Tox. 4, H312</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenol, 4-nonyl-, branched</td>
<td>284-325-5</td>
<td>84852-15-3</td>
<td>601-053-00-8</td>
<td>&gt;=1 - &lt;2.5</td>
<td>Repr. Cat. 3; R62, R63</td>
<td>Skin Corr. 1B, H314, Eye Dam. 1, H318, Repr. 2, H361fd (Fertility and Unborn child), Aquatic Acute 1, H400, Aquatic Chronic 1, H410</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Xn; R22 C; R34 N; R50/53</td>
<td>See Section 16 for the full text of the R-phrases declared above.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs 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
[5] Substance of equivalent concern

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

**SUB codes represent substances without registered CAS Numbers.**
SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Inhalation: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion: If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: Causes serious eye damage.

Inhalation: Harmful if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.

Ingestion: Harmful if swallowed. Corrosive to the digestive tract. Causes burns. May be fatal if swallowed and enters airways. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

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

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

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

Ingestion: Adverse symptoms may include the following:
- stomach pains
- nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Date of issue/Date of revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>00332041</td>
<td>15 November 2014</td>
</tr>
</tbody>
</table>

**SECTION 5: Firefighting measures**

5.1 Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide
- Nitrogen oxides

5.3 Advice for firefighters

Special precautions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: 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: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
SECTION 6: Accidental release measures

Large spill
Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an efficient treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

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

Protective measures
Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Avoid release to the environment. Refer to special instructions/safety data sheet. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities
Storage temperature: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations
Not available.

Industrial sector specific solutions
Not available.
SECTION 8: Exposure controls/personal protection

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).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

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

DNELs - Not available.

PNECs

PNECs - Not available.

8.2 Exposure controls

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.

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

Chemical splash goggles and face shield.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves

Nitrile, neoprene

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.

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.
SECTION 8: Exposure controls/personal protection

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**
- Physical state: Liquid.
- Colour: Colourless.
- Odour: Amine-like. [Strong]
- Odour threshold: Not available.
- pH: Not available.
- Melting point/freezing point: Not available.
- Initial boiling point and boiling range: >37.78°C
- Flash point: Closed cup: 91°C
- Evaporation rate: Not available.
- Material supports combustion: Yes.
- Flammability (solid, gas): Not available.
- Upper/lower flammability or explosive limits: Lower: 1.32% 
  Upper: 2.39%
- Vapour pressure: Highest known value: 0.09 kPa (0.7 mm Hg) (at 20°C) (Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylene)-ω-(2-aminomethylethoxy)-). Weighted average: 0.05 kPa (0.38 mm Hg) (at 20°C)
- Vapour density: Highest known value: 15.4 (Air = 1) (1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich). Weighted average: 6.65 (Air = 1)
- Relative density: 1.02
- Solubility(ies): Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/water: Not available.
- Auto-ignition temperature: Not available.
- Decomposition temperature: Not available.
- 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 : The product is stable.

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.
Refer to protective measures listed in sections 7 and 8.

10.5 Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.

10.6 Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>furfuryl alcohol</td>
<td>LC50</td>
<td>Rat</td>
<td>233 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>Rat</td>
<td>934 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rabbit</td>
<td>400 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rabbits</td>
<td>3825 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
<td>0.132 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-</td>
<td>LD50 Oral</td>
<td>Rate</td>
<td>3 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>benzyl alcohol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>242 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1.23 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>Mixture of Cycloaliphatic Amines</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;1 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>TERTIARY AMINE</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>1.242 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>3, 6-diazaoctanethylenediamine</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>805 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>4-nonylphenol, branched</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2.14 g/kg</td>
<td>-</td>
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<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>0.58 g/kg</td>
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</tbody>
</table>

Conclusion/Summary : Not available.

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>941.4 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>2204.7 mg/kg</td>
</tr>
<tr>
<td>Inhalation (gases)</td>
<td>3256.4 ppm</td>
</tr>
<tr>
<td>Inhalation (vapours)</td>
<td>12.69 mg/l</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

English (GB) United Kingdom (UK) 10/18
SECTION 11: Toxicological information

**Conclusion/Summary**
- Sensitisation: Not available.
- Mutagenicity: Not available.
- Carcinogenicity: Not available.
- Reproductive toxicity: Not available.
- Teratogenicity: Not available.

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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furfuryl alcohol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Formaldehyde, polymer with 1,3-dimethylbenzene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furfuryl alcohol</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylthoxy)-</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

**Information on the likely routes of exposure**
- Not available.

**Potential acute health effects**

- **Inhalation**: Harmful if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Ingestion**: Harmful if swallowed. Corrosive to the digestive tract. Causes burns. May be fatal if swallowed and enters airways. May cause burns to mouth, throat and stomach.
- **Skin contact**: Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
- **Eye contact**: Causes serious eye damage.

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

- **Inhalation**: Adverse symptoms may include the following: respiratory tract irritation, coughing.
- **Ingestion**: Adverse symptoms may include the following: stomach pains, nausea or vomiting.
SECTION 11: Toxicological information

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

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

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects: Not available.

Conclusion/Summary: Not available.

General: May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

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.

Other information: Not available.

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. See Sections 2 and 3 for details.

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

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

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

Ingestion may cause nausea, diarrhea and vomiting.

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

Contains 2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethylamine, 3,6-diazaoctanethylenediamin. May produce an allergic reaction.
SECTION 12: Ecological information

12.1 Toxicity
Conclusion/Summary : Not available.

12.2 Persistence and degradability
Conclusion/Summary : Not available.

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

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>furfuryl alcohol</td>
<td>0.28</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>benzyl alcohol</td>
<td>1.1</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>3, 6-diazoctanethylenediamin</td>
<td>-1.66 to -1.4</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>4-nonylphenol, branched</td>
<td>-</td>
<td>251.19</td>
<td>low</td>
</tr>
</tbody>
</table>

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

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.

European waste catalogue (EWC)

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>08 01 11*</td>
<td>waste paint and varnish containing organic solvents or other dangerous substances</td>
</tr>
</tbody>
</table>

Packaging
SECTION 13: Disposal considerations

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.

<table>
<thead>
<tr>
<th>Type of packaging</th>
<th>European waste catalogue (EWC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container</td>
<td>15 01 06 mixed packaging</td>
</tr>
</tbody>
</table>

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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN3066</td>
<td>PAINT RELATED MATERIAL</td>
<td>PAINT RELATED MATERIAL</td>
<td>PAINT RELATED MATERIAL</td>
<td>PAINT RELATED MATERIAL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3 Transport hazard class(es)</th>
<th>UN3066</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.4 Packing group</th>
<th>II</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/RID: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td>Tunnel code: (E)</td>
</tr>
<tr>
<td>ADN: The product is only regulated as an environmentally hazardous substance when transported in tank vessels.</td>
</tr>
<tr>
<td>IMDG: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td>IATA: The environmentally hazardous substance mark may appear if required by other transportation regulations.</td>
</tr>
</tbody>
</table>

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.
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

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Intrinsic property</th>
<th>Status</th>
<th>Reference number</th>
<th>Date of revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol, branched and linear [substances with a linear and/or branched alky chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]</td>
<td>Substance of equivalent concern for environment</td>
<td>Candidate</td>
<td>ED/169/2012</td>
<td>4/19/2013</td>
</tr>
</tbody>
</table>

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

None of the components are listed.

Other EU regulations

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Carcinogenic effects</th>
<th>Mutagenic effects</th>
<th>Developmental effects</th>
<th>Fertility effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furfuryl alcohol</td>
<td>Carc. 2, H351</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4-nonylphenol, branched</td>
<td>-</td>
<td>-</td>
<td>Repr. 2, H361d (Unborn child)</td>
<td>Repr. 2, H361f (Fertility)</td>
</tr>
</tbody>
</table>

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

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
- H302 = Harmful if swallowed.
- H304 = May be fatal if swallowed and enters airways.
- H312 = Harmful in contact with skin.
- H314 = Causes severe skin burns and eye damage.
- H315 = Causes skin irritation.
- H317 = May cause an allergic skin reaction.
- H318 = Causes serious eye damage.
- H319 = Causes serious eye irritation.
- H331 = Toxic if inhaled.
- H332 = Harmful if inhaled.
- H335 = May cause respiratory irritation. (Respiratory tract irritation)
SECTION 16: Other information

H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Suspected of causing cancer.
H361fd (Fertility and Unborn child) Suspected of damaging fertility. Suspected of damaging the unborn child.
SECTION 16: Other information

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. 3, H331  ACUTE TOXICITY (inhalation) - Category 3
- 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
- Carc. 2, H351  CARCINOGENICITY - Category 2
- Eye Dam. 1, H318  SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
- Eye Irrit. 2, H319  SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
- Repr. 2, H361fd (Fertility and Unborn child)  TOXIC TO REPRODUCTION (Fertility and Unborn child) - Category 2
- Skin Corr. 1B, H314  SKIN CORROSION/IRRITATION - Category 1B
- Skin Corr. 1C, H314  SKIN CORROSION/IRRITATION - Category 1C
- Skin Irrit. 2, H315  SKIN CORROSION/IRRITATION - Category 2
- Skin Sens. 1, H317  SKIN SENSITIZATION - Category 1
- STOT RE 2, H373  SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
- STOT SE 3, H335  SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Full text of abbreviated R phrases

- R40- Limited evidence of a carcinogenic effect.
- R62- Possible risk of impaired fertility.
- R63- Possible risk of harm to the unborn child.
- R23- Toxic by inhalation.
- R21- Harmful in contact with skin.
- R22- Harmful if swallowed.
- R20/22- Harmful by inhalation and if swallowed.
- R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
- R21/22- Harmful in contact with skin and if swallowed.
- R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R65- Harmful: may cause lung damage if swallowed.
- R34- Causes burns.
- R37- Irritating to respiratory system.
- R36/37- Irritating to eyes and respiratory system.
- R36/37/38- Irritating to eyes, respiratory system and skin.
- R43- May cause sensitisation by skin contact.
- R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
## SECTION 16: Other information

| Full text of classifications [DSD/DPD] | Carc. Cat. 3 - Carcinogen category 3 |
|                                       | Repr. Cat. 3 - Toxic to reproduction category 3 |
|                                       | T - Toxic |
|                                       | C - Corrosive |
|                                       | Xn - Harmful |
|                                       | Xi - Irritant |
|                                       | N - Dangerous for the environment |

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| Prepared by                     | EHS             |
| Version                         | 7               |

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