

# SAFETY DATA SHEET

Residual Solvent Revised Method 467 Class 2A

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

### 1.1 Product identifier

**Product name** : Residual Solvent Revised Method 467 Class 2A  
**Part no.** : 5190-0492

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

**Identified uses** : Reagents and Standards for Analytical Chemistry Laboratory Use  
 1 x 1 ml  
**Uses advised against** : None known.

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

Agilent Technologies Deutschland GmbH  
 Hewlett-Packard-Str. 8  
 76337 Waldbronn  
 Germany  
 0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +353 1 901 4670

## 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]

|      |                                    |             |
|------|------------------------------------|-------------|
| H350 | CARCINOGENICITY                    | Category 1B |
| H412 | LONG-TERM (CHRONIC) AQUATIC HAZARD | Category 3  |
| H420 | HAZARDOUS TO THE OZONE LAYER       | Category 1  |

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

See Section 16 for the full text of the 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** : H350 - May cause cancer.  
 H412 - Harmful to aquatic life with long lasting effects.  
 H420 - Harms public health and the environment by destroying ozone in the upper atmosphere.

#### Precautionary statements

**Prevention** : P201 - Obtain special instructions before use.  
 P280 - Wear protective gloves, protective clothing and eye or face protection.  
 P273 - Avoid release to the environment.

**Response** : P308 + P313 - IF exposed or concerned: Get medical advice or attention.

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**SECTION 2: Hazards identification**

- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.  
P502 - Refer to manufacturer or supplier for information on recovery or recycling.
- Hazardous ingredients** : 1,4-dioxane
- Supplemental label elements** : Not applicable.
- Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Restricted to professional users.
- Special packaging requirements**
  - 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.

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

**3.2 Mixtures** : Mixture

| Product/ingredient name | Identifiers   | %    | Classification   | Specific Conc. Limits, M-factors and ATEs  | Type    |
|-------------------------|---|------|--|--|---------|
| cyclohexane             | EC: 203-806-2<br>CAS: 110-82-7<br>Index: 601-017-00-1 | <2.5 | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410                | M [Acute] = 1<br>M [Chronic] = 1   | [1] [2] |
| methanol                | EC: 200-659-6<br>CAS: 67-56-1<br>Index: 603-001-00-X  | <3   | Flam. Liq. 2, H225<br>Acute Tox. 3, H301<br>Acute Tox. 3, H311<br>Acute Tox. 3, H331<br>STOT SE 1, H370  | ATE [Oral] = 100 mg/kg<br>ATE [Dermal] = 300 mg/kg<br>ATE [Inhalation (vapours)] = 3 mg/l<br>STOT SE 1, H370:<br>C ≥ 10%<br>STOT SE 2, H371:<br>3% ≤ C < 10% | [1] [2] |
| toluene                 | EC: 203-625-9<br>CAS: 108-88-3<br>Index: 601-021-00-3 | <1   | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>Repr. 2, H361d<br>STOT SE 3, H336<br>STOT RE 2, H373 (nervous system) (inhalation)<br>Asp. Tox. 1, H304 | STOT SE 3, H336:<br>C ≥ 20%  | [1] [2] |

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

|                 |   |      |  |  |                    |
|-----------------|---|------|--|--|--------------------|
| tetrahydrofuran | EC: 203-726-8<br>CAS: 109-99-9<br>Index: 603-025-00-0 | <1   | Aquatic Chronic 3, H412<br>Flam. Liq. 2, H225<br>Acute Tox. 4, H302<br>Eye Irrit. 2, H319<br>Carc. 2, H351<br>STOT SE 3, H335<br>EUH019  | ATE [Oral] = 1650 mg/kg<br>Eye Irrit. 2, H319: C ≥ 25%<br>STOT SE 3, H335: C ≥ 25% | [1] [2]            |
| dichloromethane | EC: 200-838-9<br>CAS: 75-09-2<br>Index: 602-004-00-3  | ≤0.3 | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Carc. 2, H351<br>STOT SE 3, H336<br>Ozone 1, H420   | -  | [1] [2]            |
| 1,4-dioxane     | EC: 204-661-8<br>CAS: 123-91-1<br>Index: 603-024-00-5 | ≤0.3 | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>Carc. 1B, H350<br>STOT SE 3, H335<br>EUH019<br>EUH066<br><b>See Section 16 for the full text of the H statements declared above.</b> | -  | [1] [2]<br>[3] [4] |

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 of equivalent concern
- [4] Substance with carcinogenic, mutagenic or reproductive toxicity properties

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

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## SECTION 4: First aid measures

**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

#### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**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.

## 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

**Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.  
**Hazardous combustion products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide  
 sulfur oxides  
 Formaldehyde.

### 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

## SECTION 6: Accidental release measures

**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** : 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.

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

**Methods for cleaning up** : 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.

**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

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapour or mist. Avoid release to the environment. Avoid contact with eyes, skin and clothing. Do not ingest. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Refer to special instructions/safety data sheet.

**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** : 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. See Section 10 for incompatible materials before handling or use.

### 7.3 Specific end use(s)

**Recommendations** : Industrial applications, Professional applications.

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

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

**8.1 Control parameters**

Occupational exposure limits

| Product/ingredient name | Exposure limit values  |
|-------------------------|--|
| cyclohexane             | <p><b>NAOSH (Ireland, 4/2024)</b> Notes: EU derived Occupational Exposure Limit Values<br/>                     OELV 8 hours: 200 ppm.<br/>                     OELV 8 hours: 700 mg/m<sup>3</sup>.<br/> <b>EU OEL (Europe, 1/2022)</b><br/>                     TWA 8 hours: 700 mg/m<sup>3</sup>.<br/>                     TWA 8 hours: 200 ppm.</p>   |
| methanol                | <p><b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br/>                     OELV 8 hours: 200 ppm.<br/>                     OELV 8 hours: 260 mg/m<sup>3</sup>.<br/> <b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.<br/>                     TWA 8 hours: 200 ppm.<br/>                     TWA 8 hours: 260 mg/m<sup>3</sup>.</p>   |
| toluene                 | <p><b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br/>                     OELV 8 hours: 50 ppm.<br/>                     OELV 8 hours: 192 mg/m<sup>3</sup>.<br/>                     OELV 15 minutes: 100 ppm.<br/>                     OELV 15 minutes: 384 mg/m<sup>3</sup>.<br/> <b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.<br/>                     TWA 8 hours: 192 mg/m<sup>3</sup>.<br/>                     TWA 8 hours: 50 ppm.<br/>                     STEL 15 minutes: 384 mg/m<sup>3</sup>.<br/>                     STEL 15 minutes: 100 ppm.</p>   |
| tetrahydrofuran         | <p><b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br/>                     OELV 8 hours: 50 ppm.<br/>                     OELV 8 hours: 150 mg/m<sup>3</sup>.<br/>                     OELV 15 minutes: 100 ppm.<br/>                     OELV 15 minutes: 300 mg/m<sup>3</sup>.<br/> <b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.<br/>                     TWA 8 hours: 50 ppm.<br/>                     TWA 8 hours: 150 mg/m<sup>3</sup>.<br/>                     STEL 15 minutes: 100 ppm.<br/>                     STEL 15 minutes: 300 mg/m<sup>3</sup>.</p>   |
| dichloromethane         | <p><b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br/>                     OELV 15 minutes: 706 mg/m<sup>3</sup>.<br/>                     OELV 15 minutes: 200 ppm.<br/>                     OELV 8 hours: 353 mg/m<sup>3</sup>.<br/>                     OELV 8 hours: 100 ppm.<br/> <b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.<br/>                     STEL 15 minutes: 200 ppm.<br/>                     STEL 15 minutes: 706 mg/m<sup>3</sup>.<br/>                     TWA 8 hours: 100 ppm.<br/>                     TWA 8 hours: 353 mg/m<sup>3</sup>.</p> |
| 1,4-dioxane             | <p><b>NAOSH (Ireland, 4/2024)</b> Carc 1B. Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br/>                     OELV 8 hours: 20 ppm.<br/>                     OELV 8 hours: 73 mg/m<sup>3</sup>.<br/> <b>EU OEL (Europe, 1/2022)</b><br/>                     TWA 8 hours: 73 mg/m<sup>3</sup>.<br/>                     TWA 8 hours: 20 ppm.</p>   |

Biological exposure indices

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

| Product/ingredient name | Exposure indices  |
|-------------------------|---|
| methanol                | <b>NAOSH BGVs (Ireland, 1/2011)</b><br>BMGV: 15 mg/l, methanol [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.   |
| toluene                 | <b>NAOSH BGVs (Ireland, 1/2011)</b><br>BMGV: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.<br>BMGV: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.<br>BMGV: 0.02 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.                        |
| tetrahydrofuran         | <b>NAOSH BGVs (Ireland, 1/2011)</b><br>BMGV: 2 mg/l, THF [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.   |
| dichloromethane         | <b>NAOSH BGVs (Ireland, 1/2011)</b><br>BMGV: 1 mg/l, methylene chloride [in blood]. Sampling time: end of shift - As soon as possible after exposure ceases.<br>BMGV: 4 %, COHb [in blood]. Sampling time: end of shift - As soon as possible after exposure ceases.<br>BMGV: 0.3 mg/l, methylene chloride [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases. |

**Recommended monitoring procedures** : 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**

| Product/ingredient name   | Result  |  |
|---|---|--|
| cyclohexane   | DNEL - General population - Long term - Oral 59.4 mg/kg bw/day            |  |
|   | DNEL - General population - Long term - Inhalation 206 mg/m <sup>3</sup>  |  |
|   | DNEL - General population - Long term - Inhalation 206 mg/m <sup>3</sup>  |  |
|   | DNEL - General population - Short term - Inhalation 412 mg/m <sup>3</sup> |  |
|   | DNEL - General population - Short term - Inhalation 412 mg/m <sup>3</sup> |  |
|   | DNEL - Workers - Long term - Inhalation 700 mg/m <sup>3</sup>             |  |
|   | DNEL - Workers - Long term - Inhalation 700 mg/m <sup>3</sup>             |  |
|   | DNEL - General population - Long term - Dermal 1186 mg/kg bw/day          |  |
|   | DNEL - Workers - Short term - Inhalation 1400 mg/m <sup>3</sup>           |  |
|   | DNEL - Workers - Short term - Inhalation 1400 mg/m <sup>3</sup>           |  |
|   | DNEL - Workers - Long term - Dermal 2016 mg/kg bw/day                     |  |
|   | methanol  | DNEL - General population - Short term - Oral 4 mg/kg bw/day             |
|   |   | DNEL - General population - Long term - Oral 4 mg/kg bw/day              |
|   |   | DNEL - General population - Short term - Dermal 4 mg/kg bw/day           |
|   |   | DNEL - General population - Long term - Dermal 4 mg/kg bw/day            |
|   |   | DNEL - Workers - Short term - Dermal 20 mg/kg bw/day                     |
|   |   | DNEL - Workers - Long term - Dermal 20 mg/kg bw/day                      |
|   |   | DNEL - General population - Short term - Inhalation 26 mg/m <sup>3</sup> |
|   |   | DNEL - General population - Long term - Inhalation 26 mg/m <sup>3</sup>  |
|   |   | DNEL - General population - Short term - Inhalation 26 mg/m <sup>3</sup> |
| DNEL - General population - Long term - Inhalation 26 mg/m <sup>3</sup> |   |  |
| toluene   | DNEL - Workers - Short term - Inhalation 130 mg/m <sup>3</sup>            |  |
|   | DNEL - Workers - Long term - Inhalation 130 mg/m <sup>3</sup>             |  |
|   | DNEL - Workers - Short term - Inhalation 130 mg/m <sup>3</sup>            |  |
|   | DNEL - Workers - Long term - Inhalation 130 mg/m <sup>3</sup>             |  |

## SECTION 8: Exposure controls/personal protection

|                 |   |                          |
|-----------------|---|--------------------------|
|                 | DNEL - General population - Long term - Inhalation  | 56.5 mg/m <sup>3</sup>   |
|                 | DNEL - General population - Long term - Inhalation  | 56.5 mg/m <sup>3</sup>   |
|                 | DNEL - Workers - Long term - Inhalation             | 192 mg/m <sup>3</sup>    |
|                 | DNEL - Workers - Long term - Inhalation             | 192 mg/m <sup>3</sup>    |
|                 | DNEL - General population - Long term - Dermal      | 226 mg/kg bw/day         |
|                 | DNEL - General population - Short term - Inhalation | 226 mg/m <sup>3</sup>    |
|                 | DNEL - General population - Short term - Inhalation | 226 mg/m <sup>3</sup>    |
|                 | DNEL - Workers - Long term - Dermal                 | 384 mg/kg bw/day         |
|                 | DNEL - Workers - Short term - Inhalation            | 384 mg/m <sup>3</sup>    |
|                 | DNEL - Workers - Short term - Inhalation            | 384 mg/m <sup>3</sup>    |
| tetrahydrofuran | DNEL - General population - Long term - Oral        | 1.5 mg/kg bw/day         |
|                 | DNEL - General population - Long term - Dermal      | 1.5 mg/kg bw/day         |
|                 | DNEL - Workers - Long term - Dermal                 | 12.6 mg/kg bw/day        |
|                 | DNEL - General population - Long term - Inhalation  | 13 mg/m <sup>3</sup>     |
|                 | DNEL - General population - Short term - Inhalation | 52 mg/m <sup>3</sup>     |
|                 | DNEL - Workers - Long term - Inhalation             | 72.4 mg/m <sup>3</sup>   |
|                 | DNEL - General population - Long term - Inhalation  | 75 mg/m <sup>3</sup>     |
|                 | DNEL - Workers - Short term - Inhalation            | 96 mg/m <sup>3</sup>     |
|                 | DNEL - General population - Short term - Inhalation | 150 mg/m <sup>3</sup>    |
|                 | DNEL - Workers - Long term - Inhalation             | 150 mg/m <sup>3</sup>    |
|                 | DNEL - Workers - Short term - Inhalation            | 300 mg/m <sup>3</sup>    |
| dichloromethane | DNEL - General population - Long term - Oral        | 0.06 mg/kg bw/day        |
|                 | DMEL - General population - Short term - Inhalation | 5 mg/m <sup>3</sup>      |
|                 | DNEL - General population - Long term - Dermal      | 5.82 mg/kg bw/day        |
|                 | DNEL - Workers - Long term - Dermal                 | 12 mg/kg bw/day          |
|                 | DNEL - General population - Long term - Inhalation  | 44 mg/m <sup>3</sup>     |
|                 | DMEL - Workers - Short term - Inhalation            | 132.14 mg/m <sup>3</sup> |
|                 | DNEL - Workers - Long term - Inhalation             | 176 mg/m <sup>3</sup>    |

### PNECs

Not available.

### 8.2 Exposure controls

**Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapour or mist, 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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard 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: safety glasses with side-shields.

### 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.

**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.

## SECTION 8: Exposure controls/personal protection

- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- 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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Liquid.
- Colour** : Not available.
- Odour** : Not available.
- Odour threshold** : Not available.
- Melting point/freezing point** : 18.5°C
- Boiling point or initial boiling point and boiling range** : 189°C
- Flammability** : Not applicable.
- Lower and upper explosion limit/flammability limit** : Not available.
- Flash point** : Closed cup: 87°C
- Auto-ignition temperature** : 300 to 302°C [Based on solvent.]
- Decomposition temperature** : Not available.
- pH** : Not available.
- Viscosity** : Dynamic (room temperature): Not available.  
Kinematic (room temperature): Not available.  
Kinematic (40°C): Not available.
- Solubility** :
- | Media | Result  |
|-------|---------|
| water | Soluble |
- Partition coefficient: n-octanol/water** : Not applicable.
- Vapour pressure** : 0.059 kPa (0.4455 mm Hg)
- Relative density** : Not available.
- Relative vapour density** : 2.7 [Air = 1]
- Particle characteristics**
- Median particle size** : Not applicable.

### 9.2 Other information

#### 9.2.1 Information with regard to physical hazard classes

- Explosive properties** : Not available.
- Oxidising properties** : Not available.

## SECTION 9: Physical and chemical properties

### 9.2.2 Other safety characteristics

- Miscible with water : Yes.  
 Evaporation rate : Not available.  
 Physical/chemical properties comments : Not available.

## 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 : No specific data.  
 10.5 Incompatible materials : May react or be incompatible with oxidising materials.  
 10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

| Product/ingredient name | Result   |
|-------------------------|--|
| cyclohexane             | Rat - Oral - LD50 6240 mg/kg<br>Rabbit - Dermal - LD50 >5500 mg/kg<br>Rat - Male, Female - Inhalation - LC50 Vapour >32880 mg/m <sup>3</sup> [4 hours]   |
| methanol                | Rabbit - Dermal - LD50 15800 mg/kg<br>Rat - Oral - LD50 5600 mg/kg<br>Rat - Inhalation - LC50 Vapour 145000 ppm [1 hours]<br>Rat - Inhalation - LC50 Vapour 64000 ppm [4 hours]<br>Rat - Inhalation - LC50 Vapour 83.84 mg/l [4 hours]<br>Rat - Inhalation - LC50 Vapour 189.95 mg/l [1 hours] |
| toluene                 | Rat - Dermal - LD50 12000 mg/kg<br>Rat - Inhalation - LC50 Vapour 49 g/m <sup>3</sup> [4 hours]  |
| tetrahydrofuran         | Rat - Oral - LD50 1650 mg/kg<br>Rat - Male, Female - Dermal - LD50 >2000 mg/kg   |
| dichloromethane         | Rat - Inhalation - LC50 Vapour 76000 mg/m <sup>3</sup> [4 hours]   |
| 1,4-dioxane             | Rat - Oral - LD50 4200 mg/kg<br>Rabbit - Dermal - LD50 7600 mg/kg  |

Conclusion/Summary [Product] : Not available.

#### Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
|                         |              |                |                          |                             |                                     |

**SECTION 11: Toxicological information**

|  |        |         |     |         |     |
|--|--------|---------|-----|---------|-----|
| Residual Solvent Revised Method 467 Class 2A | 7875.9 | 23627.6 | N/A | 236.3   | N/A |
| cyclohexane                                  | 6240   | N/A     | N/A | N/A     | N/A |
| methanol                                     | 100    | 300     | N/A | 3       | N/A |
| toluene                                      | N/A    | 12000   | N/A | 49      | N/A |
| tetrahydrofuran                              | 1650   | N/A     | N/A | 53.6605 | N/A |
| dichloromethane                              | N/A    | N/A     | N/A | 76      | N/A |
| 1,4-dioxane                                  | 4200   | 7600    | N/A | N/A     | N/A |

**Skin corrosion/irritation**

**Product/ingredient name**

**Result**

|                 |   |  |
|-----------------|---|--|
| methanol        | Rabbit - Skin - Moderate irritant                               | Duration of treatment/<br>exposure: 24 hours<br>Amount/concentration<br>applied: 20 mg   |
| toluene         | Rabbit - Skin - Mild irritant<br><br>Pig - Skin - Mild irritant | Amount/concentration<br>applied: 435 mg<br>Duration of treatment/<br>exposure: 24 hours<br>Amount/concentration<br>applied: 250 uL |
|                 | Rabbit - Skin - Moderate irritant                               | Duration of treatment/<br>exposure: 24 hours<br>Amount/concentration<br>applied: 20 mg   |
| dichloromethane | Rabbit - Skin - Moderate irritant                               | Amount/concentration<br>applied: 500 mg<br>Duration of treatment/<br>exposure: 24 hours<br>Amount/concentration<br>applied: 100 mg |
| 1,4-dioxane     | Rabbit - Skin - Mild irritant                                   | Amount/concentration<br>applied: 515 mg  |

**Conclusion/Summary** : Repeated exposure may cause skin dryness or cracking.

**[Product]**

**Ingredient name**

**Conclusion/Summary**

methanol Repeated exposure may cause skin dryness or cracking.

**Serious eye damage/eye irritation**

**Product/ingredient name**

**Result**

|             |                                   |  |
|-------------|-----------------------------------|--|
| cyclohexane | Rabbit - Eyes - Severe irritant   | Amount/concentration<br>applied: 0.1 MI  |
| methanol    | Rabbit - Eyes - Moderate irritant | Duration of treatment/<br>exposure: 24 hours<br>Amount/concentration<br>applied: 100 mg    |
|             | Rabbit - Eyes - Moderate irritant | Amount/concentration<br>applied: 40 mg   |
|             | Rabbit - Eyes - Severe irritant   | Amount/concentration<br>applied: 0.1 MI  |
| toluene     | Rabbit - Eyes - Mild irritant     | Duration of treatment/<br>exposure: 0.5 minutes<br>Amount/concentration<br>applied: 100 mg |
|             | Rabbit - Eyes - Mild irritant     | Amount/concentration<br>applied: 870 ug  |

**SECTION 11: Toxicological information**

|                 |                                       |  |
|-----------------|---------------------------------------|--|
| dichloromethane | Rabbit - Eyes - Moderate irritant     | Amount/concentration applied: 162 mg   |
| 1,4-dioxane     | Rabbit - Eyes - Moderate irritant     | Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 100 mg |
|                 | Guinea pig - Eyes - Moderate irritant | Amount/concentration applied: 10 ug  |

**Conclusion/Summary [Product]** : May cause eye irritation.

**Ingredient name**

methanol

**Conclusion/Summary**

May cause eye irritation.

Respiratory corrosion/irritation

**Conclusion/Summary [Product]** : Not available.

Respiratory or skin sensitization

**Skin**

**Conclusion/Summary [Product]** : Not available.

**Respiratory**

**Conclusion/Summary [Product]** : Not available.

Germ cell mutagenicity

**Conclusion/Summary [Product]** : Not available.

Carcinogenicity

**Conclusion/Summary [Product]** : Not available.

Reproductive toxicity

**Conclusion/Summary [Product]** : Repeated or prolonged exposure to the substance can produce reproductive system damage.

**Ingredient name**

methanol

**Conclusion/Summary**

Repeated or prolonged exposure to the substance can produce reproductive system damage.

Specific target organ toxicity (single exposure)

**Product/ingredient name**

cyclohexane

methanol

toluene

tetrahydrofuran

dichloromethane

1,4-dioxane

**Result**

STOT SE 3, H336 (Narcotic effects)

STOT SE 1, H370

STOT SE 3, H336 (Narcotic effects)

STOT SE 3, H335 (Respiratory tract irritation)

STOT SE 3, H336 (Narcotic effects)

STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

**Product/ingredient name**

toluene

**Result**

STOT RE 2, H373 (nervous system) (inhalation)

## SECTION 11: Toxicological information

### Aspiration hazard

| Product/ingredient name | Result                         |
|-------------------------|--------------------------------|
| cyclohexane             | ASPIRATION HAZARD - Category 1 |
| toluene                 | ASPIRATION HAZARD - Category 1 |

**Information on likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

### Potential acute health effects

|                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : No known significant effects or critical hazards. |
| <b>Inhalation</b>   | : No known significant effects or critical hazards. |
| <b>Skin contact</b> | : No known significant effects or critical hazards. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards. |

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

|                     |                     |
|---------------------|---------------------|
| <b>Eye contact</b>  | : No specific data. |
| <b>Inhalation</b>   | : No specific data. |
| <b>Skin contact</b> | : No specific data. |
| <b>Ingestion</b>    | : No specific data. |

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

|                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

#### Long term exposure

|                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

### Potential chronic health effects

|                                     |   |
|-------------------------------------|---|
| <b>Conclusion/Summary [Product]</b> | : Not available.  |
| <b>General</b>                      | : No known significant effects or critical hazards.                           |
| <b>Carcinogenicity</b>              | : May cause cancer. Risk of cancer depends on duration and level of exposure. |
| <b>Mutagenicity</b>                 | : No known significant effects or critical hazards.                           |
| <b>Reproductive toxicity</b>        | : No known significant effects or critical hazards.                           |

## 11.2 Information on other hazards

### 11.2.1 Endocrine disrupting properties

**Conclusion/Summary [Product]** : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

**Other information** : Adverse symptoms may include the following: blurred or double vision, Eye contact can result in corneal damage or blindness. Repeated or prolonged exposure to the substance can produce liver damage. Narcotic effect. May cause nervous system disturbances.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name | Result |
|-------------------------|--------|
|-------------------------|--------|

## SECTION 12: Ecological information

|                             |                               |   |
|-----------------------------|-------------------------------|---|
| cyclohexane                 | Acute - LC50 - Fresh water    | 4530 µg/l [96 hours]                                |
|                             | methanol                      | Acute - LC50 - Marine water<br>2500 mg/l [48 hours] |
| toluene                     | Acute - LC50 - Fresh water    | 290 mg/l [96 hours]                                 |
|                             | Chronic - NOEC - Marine water | 9.96 mg/l [96 hours]                                |
|                             | Acute - EC50 - Marine water   | 2736 mg/l [96 hours]                                |
|                             | Acute - EC50 - Fresh water    | 6000 µg/l [48 hours]                                |
|                             | Acute - LC50 - Fresh water    | 5500 µg/l [96 hours]                                |
| tetrahydrofuran             | Chronic - NOEC                | 0.74 mg/l [7 days]                                  |
|                             | Acute - EC50 - Fresh water    | 12.5 mg/l [72 hours]                                |
|                             | Acute - LC50 - Fresh water    | 2160 mg/l [96 hours]                                |
| dichloromethane             | Chronic - NOEC - Fresh water  | 367 mg/l [33 days]                                  |
|                             | Acute - LC50 - Marine water   | 108.5 mg/l [48 hours]                               |
| 1,4-dioxane                 | Acute - EC50                  | 242 mg/l [72 hours]                                 |
|                             | Acute - EC50 - Fresh water    | 99 mg/l [96 hours]                                  |
|                             | Chronic - NOEC - Fresh water  | 56 mg/l [96 hours]                                  |
|                             | Chronic - NOEC - Fresh water  | 145 mg/l [32 days]                                  |
|                             | Acute - LC50 - Fresh water    | 1.5 mg/l [48 hours]                                 |
|                             | Acute - EC50 - Fresh water    | >1000 mg/l [72 hours]                               |
|                             | Acute - NOEC - Fresh water    | 580 mg/l [72 hours]                                 |
| Acute - LC50 - Marine water | 6700 ppm [96 hours]           |   |

**Conclusion/Summary** : Not available.

**[Product]**

**Ingredient name**  
dichloromethane

**Conclusion/Summary**  
Harmful to aquatic organisms.

### 12.2 Persistence and degradability

**Product/ingredient name**

**Result**

dichloromethane

Aerobic

>70% [28 days] - Readily Aerobic

**Conclusion/Summary** : Not available.

**[Product]**

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| cyclohexane             | -                 | -          | Readily          |
| methanol                | -                 | -          | Readily          |
| toluene                 | -                 | -          | Readily          |
| tetrahydrofuran         | -                 | -          | Inherent         |
| dichloromethane         | -                 | -          | Readily          |
| 1,4-dioxane             | -                 | -          | Not readily      |

### 12.3 Bioaccumulative potential

| Product/ingredient name | LogP <sub>ow</sub> | BCF                     | Potential |
|-------------------------|--------------------|-------------------------|-----------|
| cyclohexane             | 3.44               | 167                     | Low       |
| methanol                | -0.77              | <10                     | Low       |
| toluene                 | 2.73               | 90                      | Low       |
| tetrahydrofuran         | 0.45               | -                       | Low       |
| dichloromethane         | 1.25               | 22.91                   | Low       |
| 1,4-dioxane             | -0.42              | 0.3 to 0.7 [OECD 305 C] | Low       |

### 12.4 Mobility in soil

**Soil/water partition coefficient**

**Residual Solvent Revised Method 467 Class 2A**

**SECTION 12: Ecological information**

| Product/ingredient name | logKoc | Koc     |
|-------------------------|--------|---------|
| cyclohexane             | 2      | 96.5031 |
| methanol                | 0.44   | 2.75443 |
| toluene                 | 2.1    | 117.115 |
| tetrahydrofuran         | 1.1    | 12.0189 |
| dichloromethane         | 1.4    | 27.5998 |
| 1,4-dioxane             | 1.2    | 16.9364 |

**Results of PMT and vPvM assessment**

| Product/ingredient name | PMT | P   | M   | T   | vPvM | vP  | vM  |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| cyclohexane             | No  | No  | No  | No  | No   | No  | No  |
| methanol                | No  | No  | Yes | No  | No   | No  | Yes |
| toluene                 | N/A | N/A | Yes | Yes | No   | N/A | No  |
| tetrahydrofuran         | No  | N/A | Yes | No  | N/A  | N/A | Yes |
| dichloromethane         | No  | N/A | Yes | No  | N/A  | N/A | Yes |
| 1,4-dioxane             | N/A | N/A | Yes | Yes | N/A  | N/A | Yes |

**Mobility** : Not available.

**Conclusion/Summary** : The product does not meet the criteria to be considered as a PMT or vPvM.

**12.5 Results of PBT and vPvB assessment**

**Regulation (EC) No. 1907/2006 [REACH]**

| Product/ingredient name | PBT | P   | B   | T   | vPvB | vP  | vB  |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| cyclohexane             | No  | N/A | No  | No  | No   | N/A | No  |
| methanol                | No  | No  | No  | No  | No   | No  | No  |
| toluene                 | No  | N/A | No  | Yes | No   | N/A | No  |
| tetrahydrofuran         | No  | N/A | N/A | No  | N/A  | N/A | N/A |
| dichloromethane         | No  | N/A | No  | No  | No   | N/A | No  |
| 1,4-dioxane             | No  | N/A | No  | Yes | No   | N/A | No  |

**Regulation (EC) No. 1272/2008 [CLP]**

| Product/ingredient name | PBT | P   | B   | T   | vPvB | vP  | vB  |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| cyclohexane             | No  | No  | No  | No  | No   | No  | No  |
| methanol                | No  | No  | No  | No  | No   | No  | No  |
| toluene                 | No  | N/A | No  | Yes | No   | N/A | No  |
| tetrahydrofuran         | No  | N/A | N/A | No  | N/A  | N/A | N/A |
| dichloromethane         | No  | N/A | No  | No  | No   | N/A | No  |
| 1,4-dioxane             | No  | N/A | No  | Yes | No   | N/A | No  |

**Conclusion/Summary** : The product does not meet the criteria to be considered as a PBT or vPvB.

**Regulation (EC) No. 1272/2008 [CLP]**

**12.6 Endocrine disrupting properties**

**Conclusion/Summary [Product]** : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

**12.7 Other adverse effects**

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : 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. The generation of waste should be avoided or minimised wherever possible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

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

#### 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.

**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.

## SECTION 14: Transport information

|                                 | ADR/RID        | IMDG           | IATA           |
|---------------------------------|----------------|----------------|----------------|
| 14.1 UN number or ID number     | Not regulated. | Not regulated. | Not regulated. |
| 14.2 UN proper shipping name    | -              | -              | -              |
| 14.3 Transport hazard class(es) | -              | -              | -              |
| 14.4 Packing group              | -              | -              | -              |
| 14.5 Environmental hazards      | No.            | No.            | No.            |

### Additional information

**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.

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

#### Annex XIV

#### Substances of very high concern

## SECTION 15: Regulatory information

| Ingredient name | Intrinsic property                               | Status    | Reference number   | Date of revision |
|-----------------|--|-----------|--------------------|------------------|
| 1,4-Dioxane     | Carcinogen                                       | Candidate | D(2021)<br>4569-DC | 7/8/2021         |
| 1,4-Dioxane     | Substance of equivalent concern for human health | Candidate | D(2021)<br>4569-DC | 7/8/2021         |
| 1,4-Dioxane     | Substance of equivalent concern for environment  | Candidate | D(2021)<br>4569-DC | 7/8/2021         |

### 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 / The components are not impacted by a restriction

**Labelling** : Restricted to professional users.

### Other EU regulations

**Industrial emissions (integrated pollution prevention and control)** : Listed

**- Air**

### Ozone depleting substances (EU 2024/590)

| Ingredient name | Status   |
|-----------------|----------|
| dichloromethane | Annex II |

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

Not listed.

### Persistent Organic Pollutants

Not listed.

### Seveso Directive

This product is not controlled under the Seveso Directive.

### 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.

### Inventory list

- Australia** : All components are listed or exempted.
- Canada** : At least one component is not listed in DSL but all such components are listed in NDSL.
- China** : All components are listed or exempted.
- Eurasian Economic Union** : **Russian Federation inventory**: All components are listed or exempted.
- Japan** : **Japan inventory (CSCL)**: All components are listed or exempted.  
**Japan inventory (ISHL)**: Not determined.

**SECTION 15: Regulatory information**

- New Zealand** : All components are listed or exempted.
- Philippines** : Not determined.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** : Not determined.
- Turkey** : Not determined.
- United States** : All components are active or exempted.
- Viet Nam** : All components are listed or exempted.

**15.2 Chemical safety assessment** : This product contains substances for which Chemical Safety Assessments might still be required.

**SECTION 16: Other information**

✔ Indicates information that has changed from previously issued version.

- Abbreviations and acronyms** :
- ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
  - ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
  - ATE = Acute Toxicity Estimate
  - B = Bioaccumulative
  - BCF = Bioconcentration Factor
  - 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
  - IATA = International Air Transport Association
  - IMDG = International Maritime Dangerous Goods
  - IMO = International Maritime Organization
  - M = Mobile
  - N/A = Not available
  - P = Persistent
  - PBT = Persistent, Bioaccumulative and Toxic
  - PMT = Persistent, Mobile and Toxic
  - PNEC = Predicted No Effect Concentration
  - RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
  - RRN = REACH Registration Number
  - SGG = Segregation Group
  - T = Toxic
  - vB = Very Bioaccumulative
  - vM = Very Mobile
  - vP = Very Persistent
  - vPvB = Very Persistent and Very Bioaccumulative
  - vPvM = Very Persistent and Very Mobile

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

| Classification   | Justification  |
|--|--|
| Carc. 1B, H350<br>Aquatic Chronic 3, H412<br>Ozone 1, H420 | Calculation method<br>Calculation method<br>Calculation method |

**Full text of abbreviated H statements**

**SECTION 16: Other information**

|        |  |
|--------|--|
| H225   | Highly flammable liquid and vapour.  |
| H301   | Toxic if swallowed.  |
| H302   | Harmful if swallowed.  |
| H304   | May be fatal if swallowed and enters airways.  |
| H311   | Toxic in contact with skin.  |
| H315   | Causes skin irritation.  |
| H319   | Causes serious eye irritation.   |
| H331   | Toxic if inhaled.  |
| H335   | May cause respiratory irritation.  |
| H336   | May cause drowsiness or dizziness.   |
| H350   | May cause cancer.  |
| H351   | Suspected of causing cancer.   |
| H361d  | Suspected of damaging the unborn child.  |
| H370   | Causes damage to organs.   |
| 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.                                |
| H412   | Harmful to aquatic life with long lasting effects.                                   |
| H420   | Harms public health and the environment by destroying ozone in the upper atmosphere. |
| EUH019 | May form explosive peroxides.  |
| EUH066 | Repeated exposure may cause skin dryness or cracking.                                |

Full text of classifications [CLP/GHS]

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

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