

# SAFETY DATA SHEET

Polynuclear Aromatic Hydrocarbon Standard

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

### 1.1 Product identifier

**Product name** : Polynuclear Aromatic Hydrocarbon Standard  
**Part no.** : 8500-6035

### 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 vial  
**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]

|       |  |             |
|-------|--|-------------|
| H225  | FLAMMABLE LIQUIDS  | Category 2  |
| H302  | ACUTE TOXICITY (oral)  | Category 4  |
| H312  | ACUTE TOXICITY (dermal)  | Category 4  |
| H332  | ACUTE TOXICITY (inhalation)  | Category 4  |
| H315  | SKIN CORROSION/IRRITATION  | Category 2  |
| H319  | SERIOUS EYE DAMAGE/EYE IRRITATION                                      | Category 2  |
| H350  | CARCINOGENICITY  | Category 1B |
| H361d | REPRODUCTIVE TOXICITY  | Category 2  |
| H336  | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE<br>(Narcotic effects) | Category 3  |
| H373  | SPECIFIC TARGET ORGAN TOXICITY - REPEATED<br>EXPOSURE                  | Category 2  |
| H304  | ASPIRATION HAZARD  | Category 1  |
| H400  | SHORT-TERM (ACUTE) AQUATIC HAZARD                                      | Category 1  |
| H410  | LONG-TERM (CHRONIC) AQUATIC HAZARD                                     | Category 1  |

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

**Ingredients of unknown toxicity** :  Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 10 - 30%

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

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**SECTION 2: Hazards identification**

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** :

- H225 - Highly flammable liquid and vapour.
- H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.
- H304 - May be fatal if swallowed and enters airways.
- H315 - Causes skin irritation.
- H319 - Causes serious eye irritation.
- H336 - May cause drowsiness or dizziness.
- H350 - May cause cancer.
- H361d - Suspected of damaging the unborn child.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H410 - Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention** :

- P201 - Obtain special instructions before use.
- P280 - Wear protective gloves, protective clothing and eye or face protection.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Response** : P391 - Collect spillage.

**Storage** : P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazardous ingredients** : acetonitrile; acetone; toluene; benzo[a]pyrene and dibenz[a,h]anthracene

**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 contains substances that are assessed to be a PBT or a vPvB, refer to Section 3.2.

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

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

**3.2 Mixtures** : Mixture

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

| Product/ingredient name | Identifiers   | %         | Classification  | Specific Conc. Limits, M-factors and ATEs   | Type                |
|-------------------------|---|-----------|---|---|---------------------|
| acetonitrile            | EC: 200-835-2<br>CAS: 75-05-8<br>Index: 608-001-00-3  | ≥50 - ≤75 | Flam. Liq. 2, H225<br>Acute Tox. 4, H302<br>Acute Tox. 4, H312<br>Acute Tox. 4, H332<br>Eye Irrit. 2, H319  | ATE [Oral] = 500 mg/kg<br>ATE [Dermal] = 1100 mg/kg<br>ATE [Inhalation (vapours)] = 11 mg/l | [1] [2]             |
| acetone                 | EC: 200-662-2<br>CAS: 67-64-1<br>Index: 606-001-00-8  | ≥25 - ≤50 | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>STOT SE 3, H336<br>EUH066   | -   | [1] [2]             |
| toluene                 | EC: 203-625-9<br>CAS: 108-88-3<br>Index: 601-021-00-3 | ≥10 - ≤25 | 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<br>Aquatic Chronic 3, H412 | STOT SE 3, H336: C ≥ 20%  | [1] [2]             |
| anthracene              | EC: 204-371-1<br>CAS: 120-12-7                        | <0.1      | Skin Irrit. 2, H315<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>PBT, EUH440  | M [Acute] = 100<br>M [Chronic] = 100  | [1] [2] [3]         |
| benz[a]anthracene       | EC: 200-280-6<br>CAS: 56-55-3<br>Index: 601-033-00-9  | <0.1      | Carc. 1B, H350<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410  | M [Acute] = 100<br>M [Chronic] = 100  | [1] [2] [3] [4] [5] |
| benzo[a]pyrene          | EC: 200-028-5<br>CAS: 50-32-8<br>Index: 601-032-00-3  | <0.1      | Skin Sens. 1, H317<br>Muta. 1B, H340<br>Carc. 1B, H350<br>Repr. 1B, H360FD<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410  | Carc. 1B, H350: C ≥ 0.01%<br>M [Acute] = 100<br>M [Chronic] = 100                           | [1] [2] [3] [4] [5] |
| dibenz[a,h]anthracene   | EC: 200-181-8<br>CAS: 53-70-3<br>Index: 601-041-00-2  | ≤0.1      | Carc. 1B, H350<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410  | Carc. 1B, H350: C ≥ 0.01%<br>M [Acute] = 100<br>M [Chronic] = 100                           | [1] [2]             |
| fluoranthene            | EC: 205-912-4<br>CAS: 206-44-0                        | <0.1      | Acute Tox. 4, H302<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>PBT, EUH440<br>vPvB, EUH441   | ATE [Oral] = 2000 mg/kg<br>M [Acute] = 10000<br>M [Chronic] = 10                            | [1] [2] [3] [4]     |
| phenanthrene            | EC: 201-581-5<br>CAS: 85-01-8                         | <0.1      | Acute Tox. 4, H302<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>PBT, EUH440<br>vPvB, EUH441   | ATE [Oral] = 1800 mg/kg<br>M [Acute] = 10<br>M [Chronic] = 10                               | [1] [2] [3] [4]     |

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

|        |                                |      |  |  |                    |
|--------|--------------------------------|------|--|--|--------------------|
| pyrene | EC: 204-927-3<br>CAS: 129-00-0 | <0.1 | Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>PBT, EUH440<br>vPvB, EUH441<br><b>See Section 16 for the full text of the H statements declared above.</b> | M [Acute] = 1000<br>M [Chronic] = 1000 | [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 meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance 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 it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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. 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.
- Skin contact** : Wash with plenty of soap and 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. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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.
- 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

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**SECTION 4: First aid measures**

- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness
- Inhalation** : Adverse symptoms may include the following:  
 nausea or vomiting  
 headache  
 drowsiness/fatigue  
 dizziness/vertigo  
 unconsciousness  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 nausea or vomiting  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations

**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.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

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

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic 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  
 nitrogen oxides  
 cyanides

**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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

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**SECTION 5: Firefighting measures**

- 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- 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. Collect spillage.

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

- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. 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. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Do not breathe vapour or mist. 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. Avoid exposure during pregnancy. Do not swallow.
- 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**

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**SECTION 7: Handling and storage**

**Storage** : Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidising materials. 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.

**Seveso Directive - Reporting thresholds**

**Danger criteria**

| Category  | Notification and MAPP threshold | Safety report threshold    |
|-----------|---------------------------------|----------------------------|
| P5c<br>E1 | 5000 tonnes<br>100 tonnes       | 50000 tonnes<br>200 tonnes |

**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   |
|-------------------------|---|
| acetonitrile            | <b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br>OELV 8 hours: 40 ppm.<br>OELV 8 hours: 70 mg/m <sup>3</sup> .<br>OELV 15 minutes: 4 mg/m <sup>3</sup> .<br>OELV 15 minutes: 1.8 ppm.<br><b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.<br>TWA 8 hours: 40 ppm.<br>TWA 8 hours: 70 mg/m <sup>3</sup> .  |
| acetone                 | <b>NAOSH (Ireland, 4/2024)</b> Notes: EU derived Occupational Exposure Limit Values<br>OELV 8 hours: 500 ppm.<br>OELV 8 hours: 1210 mg/m <sup>3</sup> .<br><b>EU OEL (Europe, 1/2022)</b><br>TWA 8 hours: 500 ppm.<br>TWA 8 hours: 1210 mg/m <sup>3</sup> .   |
| toluene                 | <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. |
| anthracene              | <b>NAOSH (Ireland, 4/2024)</b> [polycyclic aromatic hydrocarbon mixtures, particularly those containing benzo[a] pyrene] Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br><b>EU OEL (Europe, 3/2024)</b> [Polycyclic aromatic hydrocarbons  |

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

|                       |   |
|-----------------------|---|
| benz[a]anthracene     | <b>mixtures</b> ] Absorbed through skin.<br><b>NAOSH (Ireland, 4/2024)</b> Carc 1B. Notes: Advisory Occupational Exposure Limit Values (OELVs)<br><b>EU OEL (Europe, 3/2024) [Polycyclic aromatic hydrocarbons mixtures]</b> Absorbed through skin.   |
| benzo[a]pyrene        | <b>NAOSH (Ireland, 4/2024)</b> Carc 1B, Muta 1B, Repr 1B. Sensitiser. Notes: Advisory Occupational Exposure Limit Values (OELVs)<br><b>EU OEL (Europe, 3/2024) [Polycyclic aromatic hydrocarbons mixtures]</b> Absorbed through skin.   |
| dibenz[a,h]anthracene | <b>NAOSH (Ireland, 4/2024) [polycyclic aromatic hydrocarbon mixtures, particularly those containing benzo[a] pyrene]</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br><b>EU OEL (Europe, 3/2024) [Polycyclic aromatic hydrocarbons mixtures]</b> Absorbed through skin. |
| fluoranthene          | <b>NAOSH (Ireland, 4/2024) [polycyclic aromatic hydrocarbon mixtures, particularly those containing benzo[a] pyrene]</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br><b>EU OEL (Europe, 3/2024) [Polycyclic aromatic hydrocarbons mixtures]</b> Absorbed through skin. |
| phenanthrene          | <b>NAOSH (Ireland, 4/2024) [polycyclic aromatic hydrocarbon mixtures, particularly those containing benzo[a] pyrene]</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br><b>EU OEL (Europe, 3/2024) [Polycyclic aromatic hydrocarbons mixtures]</b> Absorbed through skin. |
| pyrene                | <b>NAOSH (Ireland, 4/2024) [polycyclic aromatic hydrocarbon mixtures, particularly those containing benzo[a] pyrene]</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br><b>EU OEL (Europe, 3/2024) [Polycyclic aromatic hydrocarbons mixtures]</b> Absorbed through skin. |

**Biological exposure indices**

| Product/ingredient name | Exposure indices   |
|-------------------------|--|
| acetone                 | <b>NAOSH BGVs (Ireland, 1/2011)</b><br>BMGV: 50 mg/l, acetone [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. |
| Anthracene              | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift.  |
| benz[a]anthracene       | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift.  |
| benzo[a]pyrene          | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift.  |

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

|                       |   |
|-----------------------|---|
| dibenz[a,h]anthracene | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift. |
| Fluoranthene          | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift. |
| Phenanthrene          | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift. |
| Pyrene                | <b>NAOSH BGVs (Ireland, 1/2011) [Polycyclic aromatic hydrocarbons]</b><br>BMGV: 4 µmol/mol creatinine, 1-hydroxypyrene [in urine]. Sampling time: post shift. |

**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  |
|-------------------------|---|
| acetonitrile            | DNEL - General population - Long term - Oral 0.4 mg/kg bw/day             |
|                         | DNEL - General population - Short term - Oral 0.6 mg/kg bw/day            |
|                         | DNEL - General population - Long term - Dermal 1.2 mg/kg bw/day           |
|                         | DNEL - General population - Long term - Inhalation 2.4 mg/m <sup>3</sup>  |
| acetone                 | DNEL - General population - Long term - Oral 62 mg/kg bw/day              |
|                         | DNEL - General population - Long term - Dermal 62 mg/kg bw/day            |
|                         | DNEL - Workers - Long term - Dermal 186 mg/kg bw/day                      |
|                         | DNEL - General population - Long term - Inhalation 200 mg/m <sup>3</sup>  |
|                         | DNEL - Workers - Long term - Inhalation 1210 mg/m <sup>3</sup>            |
|                         | DNEL - Workers - Short term - Inhalation 2420 mg/m <sup>3</sup>           |
| toluene                 | DNEL - General population - Long term - Oral 8.13 mg/kg bw/day            |
|                         | 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>            |

**PNECs**

Not available.

**8.2 Exposure controls**

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

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. 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: chemical splash goggles.

**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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : 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. [Clear.]  
**Colour** : Clear. / Colourless.  
**Odour** : Ether-like.  
**Odour threshold** : Not available.  
**Melting point/freezing point** : -45°C  
**Boiling point or initial boiling point and boiling range** : 81.6°C  
**Flammability** : Not applicable.

**Polynuclear Aromatic Hydrocarbon Standard****SECTION 9: Physical and chemical properties**

**Lower and upper explosion limit/flammability limit** : Not available.

**Flash point** : Closed cup: -18 to 23°C

**Auto-ignition temperature** :

| Ingredient name | °C  | Method |
|-----------------|-----|--------|
| acetone         | 465 | -      |
| toluene         | 480 | -      |

**Decomposition temperature** : Not available.

**pH** : Not available.

**Viscosity** : Dynamic (room temperature): Not available.  
Kinematic (room temperature): Not available.  
Kinematic (40°C): Not available.

| Media | Result  |
|-------|---------|
| water | Soluble |

**Partition coefficient: n-octanol/water** : -0.34

**Vapour pressure** : 11.6 kPa (87 mm Hg)

**Relative density** : Not available.

**Relative vapour density** : 1.42 [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.

**9.2.2 Other safety characteristics**

**Miscible with water** : Yes.

**Evaporation rate** : 5.79 (butyl acetate = 1)

**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** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.

**10.5 Incompatible materials** : Reactive or incompatible with the following materials:  
oxidising materials  
Reactive or incompatible with the following materials: reducing materials, metals, acids and alkalis.

**Polynuclear Aromatic Hydrocarbon Standard**

**SECTION 10: Stability and reactivity**

**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**

|                |                                |                               |
|----------------|--------------------------------|-------------------------------|
| acetonitrile   | Rat - Oral - LD50              | 2460 mg/kg                    |
|                | Rat - Inhalation - LC50 Vapour | 17100 ppm [4 hours]           |
| acetone        | Rat - Oral - LD50              | 5800 mg/kg                    |
| toluene        | Rat - Dermal - LD50            | 12000 mg/kg                   |
|                | Rat - Inhalation - LC50 Vapour | 49 g/m <sup>3</sup> [4 hours] |
| benzo[a]pyrene | Rat - Oral - LD50              | 110 mg/kg                     |
| fluoranthene   | Rabbit - Dermal - LD50         | 3180 mg/kg                    |
|                | Rat - Oral - LD50              | 2 g/kg                        |
| phenanthrene   | Rat - Oral - LD50              | 1.8 g/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) |
|---|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| Polynuclear Aromatic Hydrocarbon Standard | 758.1        | 1871.1         | N/A                      | 18.7                        | N/A                                 |
| acetonitrile                              | 500          | 1100           | N/A                      | 11                          | N/A                                 |
| acetone                                   | 5800         | 20000          | N/A                      | 76                          | N/A                                 |
| toluene                                   | N/A          | 12000          | N/A                      | 49                          | N/A                                 |
| fluoranthene                              | 2000         | 3180           | N/A                      | N/A                         | N/A                                 |
| phenanthrene                              | 1800         | N/A            | N/A                      | N/A                         | N/A                                 |

**Skin corrosion/irritation**

**Product/ingredient name**

**Result**

|            |                                   |  |
|------------|-----------------------------------|--|
| acetone    | Rabbit - Skin - Mild irritant     | Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 500 mg |
|            | Rabbit - Skin - Mild irritant     | Amount/concentration applied: 395 mg   |
| toluene    | Rabbit - Skin - Mild irritant     | Amount/concentration applied: 435 mg   |
|            | Pig - Skin - Mild irritant        | Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 250 uL |
|            | Rabbit - Skin - Moderate irritant | Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 20 mg  |
|            | Rabbit - Skin - Moderate irritant | Amount/concentration applied: 500 mg   |
| anthracene | Mouse - Skin - Mild irritant      | Amount/concentration applied: 118 ug   |
| pyrene     | Rabbit - Skin - Mild irritant     | Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 500 mg |

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

**SECTION 11: Toxicological information**

**Ingredient name**

acetone

**Conclusion/Summary**

Repeated exposure may cause skin dryness or cracking.  
Causes mild skin irritation.

**Serious eye damage/eye irritation**

**Product/ingredient name**

acetonitrile

**Result**

Rabbit - Eyes - Moderate irritant

Duration of treatment/  
exposure: 24 hours  
Amount/concentration  
applied: 100 uL

acetone

Rabbit - Eyes - Mild irritant

Amount/concentration  
applied: 10 uL

Rabbit - Eyes - Moderate irritant

Duration of treatment/  
exposure: 24 hours  
Amount/concentration  
applied: 20 mg

toluene

Rabbit - Eyes - Mild irritant

Duration of treatment/  
exposure: 0.5 minutes  
Amount/concentration  
applied: 100 mg

Rabbit - Eyes - Mild irritant

Amount/concentration  
applied: 870 ug

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

**Respiratory corrosion/irritation**

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

**Ingredient name**

acetonitrile

**Conclusion/Summary**

May cause respiratory irritation.

**Respiratory or skin sensitization**

**Skin**

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

**Ingredient name**

anthracene

**Conclusion/Summary**

Can cause skin photosensitisation.

**Respiratory**

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

**Germ cell mutagenicity**

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

**Carcinogenicity**

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

**Reproductive toxicity**

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

**Polynuclear Aromatic Hydrocarbon Standard**

**SECTION 11: Toxicological information**

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

| Product/ingredient name | Result                             |
|-------------------------|------------------------------------|
| acetone                 | STOT SE 3, H336 (Narcotic effects) |
| toluene                 | STOT SE 3, H336 (Narcotic effects) |

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

| Product/ingredient name | Result  |
|-------------------------|---|
| toluene                 | STOT RE 2, H373 (nervous system) (inhalation) |

**Aspiration hazard**

| Product/ingredient name                   | Result                         |
|---|--------------------------------|
| Polynuclear Aromatic Hydrocarbon Standard | 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**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Harmful in contact with skin. Causes skin irritation.
- Ingestion** : Harmful if swallowed. Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

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

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

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

**Short term exposure**

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

**Long term exposure**

**Polynuclear Aromatic Hydrocarbon Standard**

**SECTION 11: Toxicological information**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

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

**General** : May cause damage to organs through prolonged or repeated exposure.

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

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

**Reproductive toxicity** : Suspected of damaging the unborn child.

**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.

**SECTION 12: Ecological information**

**12.1 Toxicity**

**Product/ingredient name**

**Result**

|                   |                               |                         |
|-------------------|-------------------------------|-------------------------|
| acetonitrile      | Acute - LC50 - Fresh water    | 3600 mg/l [48 hours]    |
|                   | Acute - IC50 - Fresh water    | 3685 mg/l [96 hours]    |
|                   | Chronic - NOEC - Fresh water  | 160 mg/l [21 days]      |
|                   | Chronic - NOEC - Fresh water  | 1000 mg/l [96 hours]    |
| acetone           | Acute - LC50 - Fresh water    | 1000 mg/l [96 hours]    |
|                   | Acute - EC50 - Fresh water    | 7200 mg/l [96 hours]    |
|                   | Chronic - NOEC - Marine water | 4.95 mg/l [96 hours]    |
|                   | Chronic - NOEC - Fresh water  | 0.016 ml/l [21 days]    |
|                   | Acute - LC50 - Marine water   | 4.42589 ml/l [48 hours] |
| toluene           | Acute - LC50 - Fresh water    | 5600 ppm [96 hours]     |
|                   | Acute - EC50 - Fresh water    | 6000 µg/l [48 hours]    |
|                   | Acute - LC50 - Fresh water    | 5500 µg/l [96 hours]    |
|                   | Chronic - NOEC                | 0.74 mg/l [7 days]      |
| anthracene        | Acute - EC50 - Fresh water    | 12.5 mg/l [72 hours]    |
|                   | Acute - LC50 - Marine water   | 3.6 µg/l [48 hours]     |
|                   | Acute - LC50 - Fresh water    | 1.27 µg/l [96 hours]    |
|                   | Chronic - NOEC - Fresh water  | 6.08 µg/l [5 weeks]     |
| benz[a]anthracene | Acute - LC50 - Fresh water    | 97.5 µg/l [48 hours]    |
| benzo[a]pyrene    | Acute - LC50 - Fresh water    | 0.25 mg/l [48 hours]    |
|                   | Acute - EC50 - Fresh water    | 5 µg/l [72 hours]       |
| fluoranthene      | Acute - LC50 - Fresh water    | 1.6 µg/l [48 hours]     |
|                   | Acute - LC50 - Marine water   | 0.1 µg/l [96 hours]     |
|                   | Chronic - NOEC - Fresh water  | 1.4 µg/l [32 days]      |
|                   | Chronic - NOEC - Fresh water  | 1.4 µg/l [21 days]      |
|                   | Acute - EC50 - Marine water   | 0.103 µg/ml [72 hours]  |
| phenanthrene      | Chronic - EC10 - Marine water | 31 µg/l [72 hours]      |
|                   | Acute - EC50 - Fresh water    | 0.117 mg/l [48 hours]   |
|                   | Chronic - NOEC - Fresh water  | 48 µg/l [21 days]       |
|                   | Chronic - NOEC - Fresh water  | 0.005 mg/l [90 days]    |
|                   | Chronic - NOEC - Fresh water  | 0.658 mg/l [96 hours]   |
|                   | Acute - EC50 - Fresh water    | 0.049 mg/l [96 hours]   |
| pyrene            | Acute - EC50 - Fresh water    | 324 µg/l [3 days]       |
|                   | Acute - LC50 - Marine water   | 0.89 µg/l [48 hours]    |

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

**12.2 Persistence and degradability**

**Product/ingredient name**

**Result**

**Polynuclear Aromatic Hydrocarbon Standard**

**SECTION 12: Ecological information**

Acetonitrile - 70% [21 days] - Readily -

**Conclusion/Summary** : Not available.

**[Product]**

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| Acetonitrile            | -                 | -          | Readily          |
| acetone                 | -                 | -          | Readily          |
| toluene                 | -                 | -          | Readily          |
| anthracene              | -                 | -          | Not readily      |
| fluoranthene            | -                 | -          | Not readily      |

**12.3 Bioaccumulative potential**

| Product/ingredient name                   | LogP <sub>ow</sub> | BCF             | Potential |
|---|--------------------|-----------------|-----------|
| Polynuclear Aromatic Hydrocarbon Standard | -0.34              | -               | Low       |
| acetonitrile                              | -0.34              | 3               | Low       |
| acetone                                   | -0.23              | 3               | Low       |
| toluene                                   | 2.73               | 90              | Low       |
| anthracene                                | 4.65               | 2615 [OECD 305] | High      |
| benz[a]anthracene                         | 5.76               | 257.04          | Low       |
| benzo[a]pyrene                            | 6.13               | -               | High      |
| dibenz[a,h]anthracene                     | 6.75               | -               | High      |
| fluoranthene                              | 5.16               | 3630.78         | High      |
| phenanthrene                              | 4.46               | 2511.89         | High      |
| pyrene                                    | 5.43               | 1513.56         | High      |

**12.4 Mobility in soil**

**Soil/water partition coefficient**

| Product/ingredient name | logK <sub>oc</sub> | K <sub>oc</sub> |
|-------------------------|--------------------|-----------------|
| Acetonitrile            | 0.42               | 2.62657         |
| acetone                 | 0.56               | 3.6548          |
| toluene                 | 2.1                | 117.115         |
| anthracene              | 4.3                | 20375.7         |
| benz[a]anthracene       | 5.3                | 200038          |
| benzo[a]pyrene          | 5.9                | 889341          |
| dibenz[a,h]anthracene   | 6.2                | 1657520         |
| fluoranthene            | 4.8                | 63177.5         |
| phenanthrene            | 4.3                | 22309.4         |
| pyrene                  | 4.9                | 79473.2         |

**Results of PMT and vPvM assessment**

| Product/ingredient name | PMT | P   | M   | T   | vPvM | vP  | vM  |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| Acetonitrile            | No  | N/A | Yes | No  | N/A  | N/A | Yes |
| acetone                 | No  | No  | Yes | No  | No   | No  | Yes |
| toluene                 | N/A | N/A | Yes | Yes | No   | N/A | No  |
| anthracene              | No  | Yes | No  | Yes | No   | N/A | No  |
| benz[a]anthracene       | No  | No  | No  | No  | No   | No  | No  |
| benzo[a]pyrene          | No  | No  | No  | No  | No   | No  | No  |
| dibenz[a,h]anthracene   | No  | No  | No  | No  | No   | No  | No  |
| fluoranthene            | No  | Yes | No  | Yes | No   | Yes | No  |
| phenanthrene            | No  | Yes | No  | Yes | No   | Yes | No  |
| pyrene                  | No  | Yes | No  | Yes | No   | Yes | No  |

**Mobility** : Not available.

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

**Polynuclear Aromatic Hydrocarbon Standard**

**SECTION 12: Ecological information**

**12.5 Results of PBT and vPvB assessment**

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

| Product/ingredient name | PBT | P   | B   | T   | vPvB | vP  | vB  |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| acetonitrile            | No  | N/A | No  | No  | No   | N/A | No  |
| acetone                 | No  | No  | No  | No  | No   | No  | No  |
| toluene                 | No  | N/A | No  | Yes | No   | N/A | No  |
| anthracene              | Yes | Yes | Yes | Yes | No   | N/A | No  |
| benz[a]anthracene       | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |
| benzo[a]pyrene          | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |
| dibenz[a,h]anthracene   | N/A | N/A | N/A | Yes | N/A  | N/A | N/A |
| fluoranthene            | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |
| phenanthrene            | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |
| pyrene                  | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |

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

| Product/ingredient name | PBT | P   | B   | T   | vPvB | vP  | vB  |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| acetonitrile            | No  | N/A | No  | No  | No   | N/A | No  |
| acetone                 | No  | No  | No  | No  | No   | No  | No  |
| toluene                 | No  | N/A | No  | Yes | No   | N/A | No  |
| anthracene              | Yes | Yes | Yes | Yes | No   | N/A | No  |
| benz[a]anthracene       | No  | No  | No  | No  | No   | No  | No  |
| benzo[a]pyrene          | No  | No  | No  | No  | No   | No  | No  |
| dibenz[a,h]anthracene   | No  | No  | No  | No  | No   | No  | No  |
| fluoranthene            | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |
| phenanthrene            | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |
| pyrene                  | Yes | Yes | Yes | Yes | Yes  | Yes | Yes |

**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.

**Polynuclear Aromatic Hydrocarbon Standard**

**SECTION 13: Disposal considerations**

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**SECTION 14: Transport information**

|  | <b>ADR/RID</b>   | <b>IMDG</b>   | <b>IATA</b>  |
|--|--|---|--|
| <b>14.1 UN number or ID number</b>     | UN1992   | UN1992  | UN1992   |
| <b>14.2 UN proper shipping name</b>    | FLAMMABLE LIQUID, TOXIC, N.O.S. (Acetonitrile, Acetone)                                      | FLAMMABLE LIQUID, TOXIC, N.O.S. (Acetonitrile, Acetone)                                       | Flammable liquid, toxic, n.o.s. (Acetonitrile, Acetone)  |
| <b>14.3 Transport hazard class(es)</b> | 3 (6.1)<br> | 3 (6.1)<br> | 3 (6.1)<br> |
| <b>14.4 Packing group</b>              | II   | II  | II   |
| <b>14.5 Environmental hazards</b>      | Yes.   | Yes.  | Yes. The environmentally hazardous substance mark is not required.                             |

Additional information

**Remarks:** De minimis quantities

**ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Hazard identification number** 336  
**Limited quantity** 1 L  
**Special provisions** 274  
**Tunnel code** (D/E)

**IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Emergency schedules** F-E, S-D  
**Special provisions** 274

**IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.  
**Quantity limitation** Passenger and Cargo Aircraft: 1 L. Packaging instructions: 352. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.  
**Special provisions** A3

**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

| Ingredient name                                       | Intrinsic property    | Status    | Reference number | Date of revision |
|---|-----------------------|-----------|------------------|------------------|
| <input checked="" type="checkbox"/> Benz[a]anthracene | Carcinogen            | Candidate | ED/01/2018       | 1/15/2018        |
| Benzo[a]pyrene  | -                     | Candidate | ED/21/2016       | 6/20/2016        |
| Benzo[a]pyrene  | Mutagen               | Candidate | ED/21/2016       | 6/20/2016        |
| Benzo[a]pyrene  | Toxic to reproduction | Candidate | ED/21/2016       | 6/20/2016        |
| Anthracene  | PBT                   | Candidate | ED/67/2008       | 10/28/2008       |
| Benzo[a]anthracene                                    | -                     | Candidate | ED/01/2018       | 1/15/2018        |
| Benzo[a]pyrene  | -                     | Candidate | ED/21/2016       | 6/20/2016        |
| Fluoranthene  | -                     | Candidate | ED/88/2018       | 1/15/2019        |
| Pyrene  | -                     | Candidate | ED/88/2018       | 1/15/2019        |
| Benzo[a]anthracene                                    | vPvB                  | Candidate | ED/01/2018       | 1/15/2018        |
| Benzo[a]pyrene  | -                     | Candidate | ED/21/2016       | 6/20/2016        |
| Fluoranthene  | -                     | Candidate | ED/88/2018       | 1/15/2019        |
| Phenanthrene  | -                     | Candidate | ED/88/2018       | 1/15/2019        |
| Pyrene  | -                     | Candidate | ED/88/2018       | 1/15/2019        |

**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) - Air** : Listed

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

Ozone depleting substances (EU 2024/590)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

| Category                                     |
|--|
| <input checked="" type="checkbox"/> 5c<br>E1 |

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

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**SECTION 15: Regulatory information**

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** : Not determined.
- Canada** : Not determined.
- China** : Not determined.
- Eurasian Economic Union** : **Russian Federation inventory:** All components are listed or exempted.
- Japan** : **Japan inventory (CSCL):** Not determined.  
**Japan inventory (ISHL):** Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : Not determined.
- Republic of Korea** : Not determined.
- Taiwan** : All components are listed or exempted.
- Thailand** : Not determined.
- Turkey** : Not determined.
- United States** : Not determined.
- 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

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**SECTION 16: Other information**

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         |
|-------------------------|-----------------------|
| Flam. Liq. 2, H225      | On basis of test data |
| Acute Tox. 4, H302      | Calculation method    |
| Acute Tox. 4, H312      | Calculation method    |
| Acute Tox. 4, H332      | Calculation method    |
| Skin Irrit. 2, H315     | Calculation method    |
| Eye Irrit. 2, H319      | Calculation method    |
| Carc. 1B, H350          | Calculation method    |
| Repr. 2, H361d          | Calculation method    |
| STOT SE 3, H336         | Calculation method    |
| STOT RE 2, H373         | Calculation method    |
| Asp. Tox. 1, H304       | Expert judgment       |
| Aquatic Acute 1, H400   | Calculation method    |
| Aquatic Chronic 1, H410 | Calculation method    |

**Full text of abbreviated H statements**

|        |   |
|--------|---|
| H225   | Highly flammable liquid and vapour.   |
| H302   | Harmful if swallowed.   |
| H304   | May be fatal if swallowed and enters airways.                                     |
| H312   | Harmful in contact with skin.   |
| H315   | Causes skin irritation.   |
| H317   | May cause an allergic skin reaction.  |
| H319   | Causes serious eye irritation.  |
| H332   | Harmful if inhaled.   |
| H336   | May cause drowsiness or dizziness.  |
| H340   | May cause genetic defects.  |
| H350   | May cause cancer.   |
| H360FD | May damage fertility. May damage the unborn child.                                |
| H361d  | Suspected of damaging the unborn child.   |
| 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.                                |
| EUH440 | Accumulates in the environment and living organisms including in humans.          |
| EUH441 | Strongly accumulates in the environment and living organisms including in humans. |
| EUH066 | Repeated exposure may cause skin dryness or cracking.                             |

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

|                   |   |
|-------------------|---|
| 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                   |
| Eye Irrit. 2      | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  |
| Flam. Liq. 2      | FLAMMABLE LIQUIDS - Category 2                  |
| Muta. 1B          | GERM CELL MUTAGENICITY - Category 1B            |
| PBT               | PERSISTENT, BIOACCUMULATIVE AND TOXIC           |
| Repr. 1B          | REPRODUCTIVE TOXICITY - Category 1B             |
| Repr. 2           | REPRODUCTIVE TOXICITY - Category 2              |
| Skin Irrit. 2     | SKIN CORROSION/IRRITATION - Category 2          |
| Skin Sens. 1      | SKIN SENSITISATION - Category 1                 |

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**SECTION 16: Other information**

|           |   |
|-----------|---|
| STOT RE 2 | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 |
| STOT SE 3 | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3   |
| vPvB      | VERY PERSISTENT AND VERY BIOACCUMULATIVE                        |

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