SAFETY DATA SHEET
EPA Method 525 Test Mix 4 - Low Concentration, Part Number 8500-5937

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

1.1 Product identifier
Product name: EPA Method 525 Test Mix 4 - Low Concentration, Part Number 8500-5937
Part No.: 8500-5937

1.2 Relevant identified uses of the substance or mixture and uses advised against
<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical reagent.</td>
</tr>
<tr>
<td>1 x 1 ml.</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet
Agilent Technologies Manufacturing GmbH & Co. KG
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®: +(44)-870-8200418

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
- H319: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
- H336: SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
- H412: LONG-TERM AQUATIC HAZARD - Category 3

Classification according to Directive 1999/45/EC [DPD]
The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
- Classification: F; R11
- Physical/chemical hazards: Highly flammable.
- Human health hazards: Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.
- Environmental hazards: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

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SECTION 2: Hazards identification

Hazard pictograms:

- Flammable symbol
- Caution symbol

Signal word:
- Danger

Hazard statements:
- Other hazards which do not result in classification:
  - Defatting to the skin. Prolonged or repeated contact may dry skin and cause irritation.

Precautionary statements:

**Prevention**
- P280 - Wear protective gloves. Wear eye or face protection.
- P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
- P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
- P273 - Avoid release to the environment.

**Response**
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

**Storage**
- P235 - Keep cool.

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

**Hazardous ingredients**
- Acetone
- Pentachlorophenol
- Hexachlorobenzene

**Hazardous ingredients**
- Acetone
- Pentachlorophenol
- Hexachlorobenzene

**Supplemental label elements**
- Tactile warning of danger:
  - Not applicable.

**Special packaging requirements**
- Not applicable.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Pentachlorophenol</td>
<td>EC: 201-778-6 CAS: 87-86-5 Index: 604-002-00-8</td>
<td>&lt;0.1</td>
<td>Carc. Cat. 3; R40 T+; R26 T; R24/25 Xi; R36/37/38 N; R50/53</td>
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<td>[1]</td>
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<tr>
<td>Hexachlorobenzene</td>
<td>EC: 204-273-9 CAS: 118-74-1 Index: 602-065-00-6</td>
<td>&lt;0.1</td>
<td>Carc. Cat. 2; R45 T; R48/25 N; R50/53</td>
<td>Aquatic Chronic 1, H410 Carc. 1B, H350 STOT RE 1, H372 (bones, liver and skin)</td>
<td>[1]</td>
</tr>
</tbody>
</table>

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SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>EC Number</th>
<th>CAS Number</th>
<th>Index</th>
<th>Limit</th>
<th>R-phrases</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Benzyl butyl phthalate</td>
<td>201-622-7</td>
<td>85-68-7</td>
<td>607-430-00-3</td>
<td>&lt;0.25</td>
<td>Repr. Cat. 2; R61</td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Repr. Cat. 3; R62</td>
<td>Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N; R50/53</td>
<td>Repr. 1B, H360Df (Unborn child and Fertility)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335 (Respiratory tract irritation)</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Repr. 1B, H360Df (Unborn child and Fertility)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td>Dibutyl phthalate</td>
<td>201-557-4</td>
<td>84-74-2</td>
<td>607-318-00-4</td>
<td>&lt;0.5</td>
<td>Repr. Cat. 2; R61</td>
<td>Aquatic Acute 1, H400</td>
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<tr>
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<td></td>
<td></td>
<td>Repr. Cat. 3; R62</td>
<td>Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N; R50</td>
<td>Repr. 1B, H360Df (Unborn child and Fertility)</td>
</tr>
<tr>
<td>Hexachlorocyclopentadiene</td>
<td>201-029-3</td>
<td>77-47-4</td>
<td>602-078-00-7</td>
<td>&lt;0.1</td>
<td>T+; R26</td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>T; R24</td>
<td>Aquatic Chronic 1, H410</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Xn; R22</td>
<td>Repr. 1B, H360Df (Unborn child and Fertility)</td>
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<td></td>
<td></td>
<td></td>
<td>C; R34</td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>N; R50/53</td>
<td>Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>

See Section 16 for the full text of the R-phrases declared above.

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 and hence require reporting in this section.

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[5] Substance of equivalent concern

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

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.

**Skin contact**: Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention.

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SECTION 4: First aid measures

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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.

Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact: Defatting to the skin. May cause skin dryness and irritation.

Ingestion: Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

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

Skin contact: Adverse symptoms may include the following:
- irritation
- dryness
- cracking

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 dry chemical, CO₂, 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. 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. Runoff to sewer may create fire or explosion hazard. 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

5.3 Advice for firefighters

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SECTION 5: Firefighting measures

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.

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.

6.3 Methods and materials 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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

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SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

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 oxidizing 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.

7.3 Specific end use(s)

Recommendations: Industrial applications, Professional applications.

Industrial sector specific solutions: Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</td>
</tr>
<tr>
<td></td>
<td>TWA: 1210 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 500 ppm 8 hours.</td>
</tr>
</tbody>
</table>

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

No DNELs available.

Predicted effect concentrations

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. 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.

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SECTION 8: Exposure controls/personal 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**: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**
- **Physical state**: Liquid.
- **Colour**: Not available.
- **Odour**: Not available.
- **Odour threshold**: Not available.
- **pH**: Not available.
- **Melting point/freezing point**: -95°C
- **Initial boiling point and boiling range**: 56°C
- **Flash point**: Not available.
- **Evaporation rate**: 6.06 (butyl acetate = 1)
- **Flammability (solid, gas)**: Not available.
- **Upper/lower flammability or explosive limits**:
  - Lower: 2.2%
  - Upper: 13%
- **Vapour pressure**: Not available.
- **Vapour density**: 2 [Air = 1]
- **Relative density**: Not available.
- **Solubility(ies)**:
  - Easily soluble in the following materials: cold water, hot water and acetone.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: Not available.
- **Viscosity**: Not available.
- **Explosive properties**: Not available.

9.2 Other information

No additional information.
SECTION 10: Stability and reactivity

10.1 Reactivity: No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability: The product is stable.

10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: 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 vapor to accumulate in low or confined areas.

10.5 Incompatible materials: Reactive or incompatible with the following materials: oxidizing 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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5800 mg/kg</td>
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</tr>
<tr>
<td>Pentachlorophenol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>105 mg/kg</td>
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</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>77.9 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3500 mg/kg</td>
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</tr>
<tr>
<td>Benzyl butyl phthalate</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;10000 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>6700 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2330 mg/kg</td>
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<tr>
<td>Dibutyl phthalate</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>&gt;15.68 mg/l</td>
<td>4 hours</td>
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<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3180 mg/kg</td>
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<tr>
<td>Hexachlorocyclopentadiene</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>1600 ppb</td>
<td>4 hours</td>
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<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>430 mg/kg</td>
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<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>200 mg/kg</td>
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</table>

Acute toxicity estimates: Not available.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
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</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 microliters</td>
<td>-</td>
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<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>395 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Hexachlorocyclopentadiene</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>5 minutes 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>4 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>
SECTION 11: Toxicological information

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Benzyl butyl phthalate</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachlorobenzene</td>
<td>Category 1</td>
<td>Not determined</td>
<td>bones, liver and skin</td>
</tr>
</tbody>
</table>

Aspiration hazard

Not available.

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Ingestion : Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Skin contact : Defatting to the skin. May cause skin dryness and irritation.

Eye contact : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness

Ingestion : No specific data.

Skin contact : Adverse symptoms may include the following: irritation dryness cracking

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

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
SECTION 11: Toxicological information

Potential delayed effects: Not available.

Potential chronic health effects:

General: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Other information: Not available.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Acute EC50 20.565 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 6000000 μg/l Fresh water</td>
<td>Crustaceans - Gammarus pulex</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 10000 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 100 mg/l Fresh water</td>
<td>Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.95 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.016 ml/L Fresh water</td>
<td>Crustaceans - Daphniidae</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.1 ml/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>Acute EC50 20.3 ppb Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 610 μg/l Fresh water</td>
<td>Aquatic plants - Lemna minor - Exponential growth phase</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.016 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 190 μg/l Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 38 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.01 mg/l Fresh water</td>
<td>Fish - Oncorhynchus clarkii ssp. stomias</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 5 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 10 μg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>28 days</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
<td>Acute EC50 10 μg/l Fresh water</td>
<td>Algae - Scenedesmus abundans</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 7600 μg/l Fresh water</td>
<td>Fish - Lepomis macrochirus</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 6.7 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.76 μg/l Fresh water</td>
<td>Fish - Pimephales promelas - Larvae</td>
<td>32 days</td>
</tr>
<tr>
<td>Benzyl butyl phthalate</td>
<td>Acute EC50 0.22 ppm Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 100 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 900 μg/l Fresh water</td>
<td>Crustaceans - Americamysis bahia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.76 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>2 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 550 μg/l Marine water</td>
<td>Fish - Parophrys vetulus - Young of the year</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 60 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td>Dibutyl phthalate</td>
<td>Chronic NOEC 0.26 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 3.4 μg/l Marine water</td>
<td>Algae - Gymnodinium breve</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2990 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 480 μg/l Fresh water</td>
<td>Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 210 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

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SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photoysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl butyl phthalate</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Dibutyl phthalate</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl butyl phthalate</td>
<td>EU 92/69/EEC</td>
<td>99.8 % - Readily - 14 days</td>
<td>-</td>
<td>1 mg/l</td>
</tr>
<tr>
<td>Dibutyl phthalate</td>
<td>EU 92/69/EEC</td>
<td>81 % - Readily - 28 days</td>
<td>-</td>
<td>21.7 mg/l Activated sludge</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>-0.23</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>5.12</td>
<td>457.09</td>
<td>low</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
<td>5.73</td>
<td>21379.62</td>
<td>high</td>
</tr>
<tr>
<td>Benzyl butyl phthalate</td>
<td>4.77</td>
<td>1693.25</td>
<td>high</td>
</tr>
<tr>
<td>Dibutyl phthalate</td>
<td>4.46</td>
<td>165.96</td>
<td>low</td>
</tr>
<tr>
<td>Hexachlorocyclopentadiene</td>
<td>5.04</td>
<td>-</td>
<td>high</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 07 04*</td>
<td>other organic solvents, washing liquids and mother liquors</td>
</tr>
</tbody>
</table>

Packaging
SECTION 13: Disposal considerations

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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. Vapor 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 spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory information

ADR/RID / IMDG / IATA: Not regulated.

Additional information: Remarks

De minimis quantities

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation
Substances of very high concern
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Other EU regulations

Europe inventory: All components are listed or exempted.

Black List Chemicals: Not listed

Priority List Chemicals: Not listed

Integrated pollution prevention and control list (IPPC) - Air: Listed

Integrated pollution prevention and control list (IPPC) - Water: Not listed

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Carcinogenic effects</th>
<th>Mutagenic effects</th>
<th>Developmental effects</th>
<th>Fertility effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentachlorophenol</td>
<td>Carc. 2, H351</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
<td>Carc. 1B, H350</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzyl butyl phthalate</td>
<td>-</td>
<td>-</td>
<td>Repr. 1B, H360D (Unborn child)</td>
<td>Repr. 2, H361f (Fertility)</td>
</tr>
<tr>
<td>Dibutyl phthalate</td>
<td>-</td>
<td>-</td>
<td>Repr. 1B, H360D (Unborn child)</td>
<td>Repr. 2, H361f (Fertility)</td>
</tr>
</tbody>
</table>

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

Date of issue/Date of revision: 20/12/2013
SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

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

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 2, H225</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Eye Irrit. 2, H319</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3, H336 (Narcotic effects)</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 3, H412</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements:
- H225: Highly flammable liquid and vapour.
- H301: Toxic if swallowed.
- H302: Harmful if swallowed.
- H311: Toxic in contact with skin.
- H314: Causes severe skin burns and eye damage.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H319: Causes serious eye irritation.
- H330: Fatal if inhaled.
- H335 (Respiratory tract irritation): May cause respiratory irritation. (Respiratory tract irritation)
- H336 (Narcotic effects): May cause drowsiness or dizziness. (Narcotic effects)
- H350: May cause cancer.
- H351: Suspected of causing cancer.
- H372 (bones, liver and skin): Causes damage to organs through prolonged or repeated exposure. (bones, liver and skin)
- 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.

Full text of classifications [CLP/GHS]
- Acute Tox. 2, H330: ACUTE TOXICITY (inhalation) - Category 2
- Acute Tox. 3, H301: ACUTE TOXICITY (oral) - Category 3
- Acute Tox. 3, H311: ACUTE TOXICITY (dermal) - Category 3
- Acute Tox. 4, H302: ACUTE TOXICITY (oral) - Category 4
- Aquatic Acute 1, H400: ACUTE AQUATIC HAZARD - Category 1
- Aquatic Chronic 1, H410: LONG-TERM AQUATIC HAZARD - Category 1
- Aquatic Chronic 3, H412: LONG-TERM AQUATIC HAZARD - Category 3
- Carc. 1B, H350: CARCINOGENICITY - Category 1B
- Carc. 2, H351: CARCINOGENICITY - Category 2
- Eye Irrit. 2, H319: SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
- Flam. Liq. 2, H225: FLAMMABLE LIQUIDS - Category 2
- Repr. 1B, H360Df (Unborn child and Fertility): TOXIC TO REPRODUCTION (Unborn child and Fertility) - Category 1B
- Skin Corr. 1B, H314: SKIN CORROSION/IRRITATION - Category 1B
- Skin Irrit. 2, H315: SKIN CORROSION/IRRITATION - Category 2
- Skin Sens. 1, H317: SKIN SENSITIZATION - Category 1
- STOT RE 1, H372 (bones, liver and skin): SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bones, liver and skin) - Category 1
- STOT SE 3, H335 (Respiratory tract irritation): SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
- STOT SE 3, H336 (Narcotic effects): SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SECTION 16: Other information

Full text of abbreviated R phrases:
- R11 - Highly flammable.
- R45 - May cause cancer.
- R40 - Limited evidence of a carcinogenic effect.
- R61 - May cause harm to the unborn child.
- R62 - Possible risk of impaired fertility.
- R26 - Also very toxic by inhalation.
- R24 - Also toxic in contact with skin.
- R24/25 - Also toxic in contact with skin and if swallowed.
- R48/25 - Also toxic: danger of serious damage to health by prolonged exposure if swallowed.
- R22 - Also harmful if swallowed.
- R34 - Causes burns.
- R36 - Irritating to eyes.
- R36/37/38 - Irritating to eyes, respiratory system and skin.
- R66 - Repeated exposure may cause skin dryness or cracking.
- R67 - Vapours may cause drowsiness and dizziness.
- R50 - Very toxic to aquatic organisms.
- R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD]:
- F - Highly flammable
- Carc. Cat. 2 - Carcinogen category 2
- Carc. Cat. 3 - Carcinogen category 3
- Repr. Cat. 2 - Toxic to reproduction category 2
- Repr. Cat. 3 - Toxic to reproduction category 3
- T+ - Very toxic
- T - Toxic
- C - Corrosive
- Xn - Harmful
- Xi - Irritant
- N - Dangerous for the environment

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Version: 4

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