SAFETY DATA SHEET
EN12916:2006 IP391-07 Sys. Cal. Std. 1,2, Part Number 5190-0485

Section 1. Identification

Product identifier : EN12916:2006 IP391-07 Sys. Cal. Std. 1,2, Part Number 5190-0485
Part No. (Chemical Kit) : 5190-0485
Part No. : EN12916:2006 IP391-07 Sys. Cal. Std. 1 5190-0485-1

Relevant identified uses of the substance or mixture and uses advised against
Analytical chemistry.

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: (61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

**EN12916:2006 IP391-07 Sys. Cal. Std. 1**
H225 FLAMMABLE LIQUIDS - Category 2
H315 SKIN CORROSION/IRRITATION - Category 2
H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304 ASPIRATION HAZARD - Category 1
H400 ACUTE AQUATIC HAZARD - Category 1
H410 LONG-TERM AQUATIC HAZARD - Category 1

**EN12916:2006 IP391-07 Sys. Cal. Std. 2**
H225 FLAMMABLE LIQUIDS - Category 2
H315 SKIN CORROSION/IRRITATION - Category 2
H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304 ASPIRATION HAZARD - Category 1
H400 ACUTE AQUATIC HAZARD - Category 1
H410 LONG-TERM AQUATIC HAZARD - Category 1

GHS label elements

Hazard pictograms :

![Hazard pictograms](image)

Signal word : DANGER

Date of issue/Date of revision : 28/04/2016
Date of previous issue : 30/05/2014
Version : 4

1/19
Section 2. Hazard(s) identification

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>H315 - Causes skin irritation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H304 - May be fatal if swallowed and enters airways.</td>
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<tr>
<td></td>
<td></td>
<td>H336 - May cause drowsiness or dizziness.</td>
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<tr>
<td></td>
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<td>H410 - Very toxic to aquatic life with long lasting effects.</td>
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<tbody>
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<td></td>
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<td>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.</td>
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<tr>
<td></td>
<td></td>
<td>P242 - Use only non-sparking tools.</td>
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<tr>
<td></td>
<td></td>
<td>P243 - Take precautionary measures against static discharge.</td>
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<tr>
<td></td>
<td></td>
<td>P233 - Keep container tightly closed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P271 - Use only outdoors or in a well-ventilated area.</td>
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<tr>
<td></td>
<td></td>
<td>P273 - Avoid release to the environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P261 - Avoid breathing vapour.</td>
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<tr>
<td></td>
<td></td>
<td>P264 - Wash hands thoroughly after handling.</td>
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<tbody>
<tr>
<td></td>
<td>P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.</td>
</tr>
<tr>
<td></td>
<td>P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.</td>
</tr>
<tr>
<td></td>
<td>P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</td>
</tr>
<tr>
<td></td>
<td>P302 + P352 + P362-2 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing.</td>
</tr>
<tr>
<td></td>
<td>P332 + P313 - If skin irritation occurs: Get medical attention.</td>
</tr>
<tr>
<td></td>
<td>P304 + P340 + P312 - IF INHALED: Remove victim</td>
</tr>
</tbody>
</table>
Section 2. Hazard(s) identification

to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P302 + P352 + P362-2 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing.
P332 + P313 - If skin irritation occurs: Get medical attention.

Storage

P405 - Store locked up.
P403 - Store in a well-ventilated place.
P235 - Keep cool.

Disposal

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

Supplemental label elements

Not applicable.

Other hazards which do not result in classification

None known.

Section 3. Composition and ingredient information

Substance/mixture

Mixture

CAS number/other identifiers

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1 n-Heptane</td>
<td>≥90</td>
<td>142-82-5</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1 Cyclohexane</td>
<td>≤3</td>
<td>110-82-7</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2 n-Heptane</td>
<td>≥90</td>
<td>142-82-5</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.
## Section 4. First aid measures

### Description of necessary first aid measures

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Get medical attention immediately. Call a poison center or physician. 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. 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.</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

EN12916:2006 IP391-07 Sys. Cal. Std. 2

Get medical attention immediately. Call a poison center or physician. 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. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Inhalation</th>
<th>Skin contact</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1</td>
<td>Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.</td>
<td>Causes skin irritation.</td>
<td>Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>Can cause central nervous system (CNS) depression.</td>
<td>Causes skin irritation.</td>
<td>Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.</td>
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</table>

Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1</td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>pain or irritation</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>watering</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>redness</td>
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<td>Adverse symptoms may include the following:</td>
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<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>nausea or vomiting</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>headache</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>drowsiness/fatigue</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>dizziness/vertigo</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>unconsciousness</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision : 28/04/2016
Date of previous issue : 30/05/2014
Version : 4
Section 4. First aid measures

### Skin contact

<table>
<thead>
<tr>
<th>Standard</th>
<th>Adverse symptoms may include the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1</td>
<td>irritation, redness</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>irritation, redness</td>
</tr>
</tbody>
</table>

**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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### Ingestion

<table>
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<tr>
<th>Standard</th>
<th>Adverse symptoms may include the following:</th>
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<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1</td>
<td>nausea or vomiting</td>
</tr>
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**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.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

No specific treatment.

### Specific hazards arising from the chemical

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.

Section 5. Firefighting measures

**Extinguishing media**

**Suitable extinguishing media**

Use dry chemical, CO₂, water spray (fog) or foam.

**Unsuitable extinguishing media**

Do not use water jet.

**Specific hazards arising from the chemical**

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.
Section 5. Firefighting measures

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.

EN12916:2006 IP391-07 Sys. Cal. Std. 2
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 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 thermal decomposition products

EN12916:2006 IP391-07 Sys. Cal. Std. 1
Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

EN12916:2006 IP391-07 Sys. Cal. Std. 2
Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters

EN12916:2006 IP391-07 Sys. Cal. Std. 1
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.

EN12916:2006 IP391-07 Sys. Cal. Std. 2
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

EN12916:2006 IP391-07 Sys. Cal. Std. 1
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

EN12916:2006 IP391-07 Sys. Cal. Std. 2
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code

EN12916:2006 IP391-07 Sys. Cal. Std. 1
3YE

EN12916:2006 IP391-07 Sys. Cal. Std. 2
3YE

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

EN12916:2006 IP391-07 Sys. Cal. Std. 1
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
Section 6. Accidental release measures

For emergency responders

EN12916:2006 IP391-07 Sys. Cal. Std. 1
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".

EN12916:2006 IP391-07 Sys. Cal. Std. 2
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".

Environmental precautions

EN12916:2006 IP391-07 Sys. Cal. Std. 1
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.

EN12916:2006 IP391-07 Sys. Cal. Std. 2
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.

Methods and material for containment and cleaning up

Methods for cleaning up

EN12916:2006 IP391-07 Sys. Cal. Std. 1
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.

EN12916:2006 IP391-07 Sys. Cal. Std. 2
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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

EN12916:2006 IP391-07 Sys. Cal. Std. 1
Put on appropriate personal protective equipment (see Section 8). Do not swallow. 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.
Section 7. Handling and storage

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.

Conditions for safe storage, including any incompatibilities

Store between the following temperatures: 18 to 25°C (64.4 to 77°F). 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.
**Section 7. Handling and storage**

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.

**Section 8. Exposure controls and personal protection**

**Control parameters**

**Occupational exposure limits**

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<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1 n-Heptane</td>
<td>Safe Work Australia (Australia, 1/2014). STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours. TWA: 400 ppm 8 hours.</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>Safe Work Australia (Australia, 1/2014). TWA: 350 mg/m³ 8 hours. TWA: 100 ppm 8 hours. STEL: 300 ppm 15 minutes. STEL: 1050 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2 n-Heptane</td>
<td>Safe Work Australia (Australia, 1/2014). STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours. TWA: 400 ppm 8 hours.</td>
</tr>
</tbody>
</table>

**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.

**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.

**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**
Section 8. Exposure controls and 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.

**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.

Section 9. Physical and chemical properties

**Appearance**

**Physical state**: EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Colour**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Odour**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Odour threshold**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**pH**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Melting point**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Boiling point**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Flash point**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Evaporation rate**

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

EN12916:2006 IP391-07 Sys. Cal. Std. 1
EN12916:2006 IP391-07 Sys. Cal. Std. 2

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## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Lower: 1.05%</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td>Upper: 6.7%</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td>Lower: 1.05%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Upper: 6.7%</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>3.5 [Air = 1]</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>0.684</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>215°C (419°F)</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
</tbody>
</table>

## Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reactivity</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Chemical stability</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
<tr>
<td><strong>Possibility of hazardous reactions</strong></td>
<td>EN12916:2006 IP391-07</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 1</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td></td>
<td>Sys. Cal. Std. 2</td>
<td></td>
</tr>
</tbody>
</table>

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Section 10. Stability and reactivity

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.

Incompatible materials:

Reactive or incompatible with the following materials:
- oxidizing materials

Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

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>EN12916:2006 IP391-07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sys. Cal. Std. 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n-Heptane</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>103 g/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>48000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>6240 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>EN12916:2006 IP391-07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sys. Cal. Std. 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n-Heptane</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>103 g/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>48000 ppm</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

Not available.

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)
Section 11. Toxicological information

### Information on likely routes of exposure

**Inhalation**
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - n-Heptane
  - Cyclohexane
- **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
  - n-Heptane

**Ingestion**
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
- **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Skin contact**
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
- **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2

**Eye contact**
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
- **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2

### Specific target organ toxicity (repeated exposure)

- **n-Heptane**
  - **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
    - Category 3
    - Not applicable. Narcotic effects
  - **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
    - Category 3
    - Not applicable. Narcotic effects

- **Cyclohexane**
  - **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
    - Category 3
    - Not applicable. Narcotic effects
  - **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
    - Category 3
    - Not applicable. Narcotic effects

### Aspiration hazard

Not available.

### Potential acute health effects

#### Eye contact
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
  - No known significant effects or critical hazards.

#### Inhalation
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
  - Can cause central nervous system (CNS) depression.
  - Can cause drowsiness or dizziness.

#### Skin contact
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
  - Causes skin irritation.

#### Ingestion
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
  - 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
- **EN12916:2006 IP391-07 Sys. Cal. Std. 1**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 1
  - Adverse symptoms may include the following:
    - pain or irritation
    - watering
    - redness

- **EN12916:2006 IP391-07 Sys. Cal. Std. 2**
  - EN12916:2006 IP391-07 Sys. Cal. Std. 2
  - Adverse symptoms may include the following:
    - pain or irritation
    - watering
    - redness

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Section 11. Toxicological information

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
- redness

Ingestion

Adverse symptoms may include the following:

- nausea or vomiting

Potential chronic health effects

Not available.

General

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.
Section 11. Toxicological information

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Other information
Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>Acute LC50 375000 µg/l Fresh water</td>
<td>Fish - Oreochromis mossambicus</td>
<td>96 hours</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>Acute LC50 8300 µg/l Marine water</td>
<td>Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>Acute LC50 375000 µg/l Fresh water</td>
<td>Fish - Oreochromis mossambicus</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
Not available.

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>n-Heptane</td>
<td>4.66</td>
<td>552</td>
<td>high</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>3.44</td>
<td>167</td>
<td>low</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>4.66</td>
<td>552</td>
<td>high</td>
</tr>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (K_{oc}): Not available.
Section 12. Ecological information

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

Section 13. Disposal considerations

Disposal methods : 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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

Regulatory information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code.

Additional information : Remarks
De minimis quantities

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.

Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons
6

Model Work Health and Safety Regulations - Scheduled Substances
No listed substance

Australia inventory (AICS) : Not determined.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>List name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1</td>
<td>POPs - Annex 3</td>
<td>Listed</td>
</tr>
</tbody>
</table>

International lists

National inventory

- **Canada**: All components are listed or exempted.
- **China**: Not determined.
- **Europe**: All components are listed or exempted.
- **Malaysia**: 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.
- **Turkey**: Not determined.
- **United States**: All components are listed or exempted.

Section 16. Any other relevant information

**History**

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**Key to abbreviations**

- ADG = Australian Dangerous Goods
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- NOHSC = National Occupational Health and Safety Commission
- SUSMP = Standard Uniform Schedule of Medicine and Poisons
- UN = United Nations

**Procedure used to derive the classification**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 1</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Flam. Liq. 2, H225</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Irrit. 2, H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3, H336</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Asp. Tox. 1, H304</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Aquatic Acute 1, H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1, H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN12916:2006 IP391-07 Sys. Cal. Std. 2</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Flam. Liq. 2, H225</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Irrit. 2, H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3, H336</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Asp. Tox. 1, H304</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Aquatic Acute 1, H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1, H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>
Section 16. Any other relevant information

References : Not available.

⚠ Indicates information that has changed from previously issued version.

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