Guide to Europe’s new Safety Data Sheets

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Safety Data Sheet Chapters

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6. Accidental Release Measures
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# Chapter 1: Identification of the Substance/Mixture and of the Company/Undertaking

## 1. Identification of the Substance/Mixture and of the Company/Undertaking

### 1.1 Product Identifier

<table>
<thead>
<tr>
<th>Material Name</th>
<th>Ortho-xylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>Q9163, Q9167, Q9304</td>
</tr>
<tr>
<td>Other Identifier</td>
<td>01-2119485822-30-0007, 01-2119485822-30-0009, 01-2119485822-30-0010</td>
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</tbody>
</table>

### 1.2 Relevant identified uses of the substance or mixture

| Product use | Raw material for use in the chemical industry. Please refer to Ch16 and/or the annexes for the registered uses under REACH. |

### 1.3 Details of the supplier of the substance or mixture

| Manufacturer/Supplier | Shell Chemicals UK |
| Local Contact | Shell Chemicals UK |
| Telephone | +31 (0)10231 7425 |
| Fax | +31 (0)10231 7116 |
| Email contact for MSDS | sccmsds@shell.com |

### 1.4 Emergency Telephone Number

| +44 (0) 1235 239 670 |

## 2. Hazards Identification

### 2.1 Classification of substance or mixture

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Flammable liquids, Category 3 (H226)</td>
<td></td>
<td></td>
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<tr>
<td>Acute toxicity, Category 4 (H312)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin irritation, Category 2 (H315)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation; Category 2A (H319)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard; Category 1 (H304)</td>
<td></td>
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<tr>
<td>Specific target organ systemic (H335)</td>
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</table>

Shells Provides the Following Additional Classification Data:

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<tr>
<th>SERIOUS EYE DAMAGE/IRRITATION: Category 2A</th>
<th>SHELL Classification</th>
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</thead>
<tbody>
<tr>
<td>ASPIRATION HAZARD: Category 1</td>
<td>SHELL Classification</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN SYSTEMIC</td>
<td>SHELL Classification</td>
</tr>
</tbody>
</table>

Print Date 26.11.2010
Chapter 2: Hazards Identification

Section 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Material Name: Ortho-xylene
Product Code: Q9163, Q9167, Q9304

1.2 Relevant identified uses of the substance or mixture

Product use: Raw material for use in the chemical industry. Please refer to Ch16 and/or the annexes for the registered uses under REACH.

1.3 Details of the supplier of the substance or mixture

Manufacturer/Supplier: Shell Chemicals UK
Local Contact: Shell Chemicals UK
Telephone: +31 (0)10231 7425
Fax: +31 (0)10231 7119
Email contact for MSDS: sccmsds@shell.com

1.4 Emergency Telephone Number

+44 (0) 1235 239 670

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

<table>
<thead>
<tr>
<th>Hazard Class &amp; Category</th>
<th>Hazard statement</th>
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<tbody>
<tr>
<td>Flammable Liquid, Category II</td>
<td>H226</td>
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<tr>
<td>Acute toxicity, Category 4</td>
<td>H312</td>
</tr>
<tr>
<td>Acute toxicity, Category 4</td>
<td>H319</td>
</tr>
<tr>
<td>Skin irritation, Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>SHELL PROVIDES THE FOLLOWING ADDITIONAL CLASSIFICATION DATA;</td>
<td></td>
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<tr>
<td>SERIOUS EYE DAMAGE/IRRITATION, Category 2A, (SHELL Classification)</td>
<td>H310</td>
</tr>
<tr>
<td>ASPIRATION HAZARD, Category 1, (SHELL Classification)</td>
<td>H304</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN SYSTEMIC</td>
<td>H335</td>
</tr>
</tbody>
</table>

Print Date 26.11.2010
 exceeded.

Signal words: 

SHELL PROVIDES THE FOLLOWING ADDITIONAL CLASSIFICATION DATA

Symbol(s): 

Danger

CLP Hazard statements: 

- PHYSICAL HAZARDS:
  - H226: Flammable liquid and vapor.
- HEALTH HAZARDS:
  - H332: Harmful if inhaled.
  - H312: Harmful in contact with skin.
  - H315: Causes skin irritation.
  - H319: Causes serious eye irritation.
  - H304: May be fatal if swallowed and enters airways.
  - H335: May cause respiratory irritation.
- ENVIRONMENTAL HAZARDS:
  - Not classified as environmental hazard according to CLP criteria.

CLP Precautionary statements:

Prevention:
- P210: Keep away from heat/sparks/open flames/hot surfaces.
- No smoking.
- P243: Take precautionary measures against static discharge.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
Chapter 2: Hazards Identification

Shell Chemicals

Safety Data Sheet

Response:

P303+P361+P353: IF ON SKIN (or hair); Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313: if skin irritation occurs: Get medical advice/attention.
P301+P330: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P351: Do NOT induce vomiting.

Labeling according to Directive 1999/45/EC

EC Symbols:
Xn Harmful.

EC Classification:
Flammable. Harmful.

EC Risk Phrases:
R10 Flammable.
R20/21 Harmful by inhalation and in contact with skin.
R38 Irritating to skin.

EC Safety Phrases:
S2 Keep out of reach of children.
S25 Avoid contact with eyes.

2.3 Other Hazards

Health Hazards:
Harmful by inhalation and in contact with skin. Vapours may cause drowsiness and dizziness. Slightly irritating to respiratory system. Irritating to skin. Moderately irritating to eyes. Harmful: may cause lung damage if swallowed. Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s): Central nervous system (CNS).

Safety Hazards:
Highly flammable. In use, may form flammable/explosive vapour-air mixture. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

Environmental Hazards:
Toxic to aquatic organisms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance
Synonyms:
o-Xylene

CAS No.:
95-47-0

INDEX No.:
601-002-06-9

EC Number:
203-422-2

3.2 Mixtures

Print Date 26.11.2010
MSDS_GB
Response:
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P231: Do NOT induce vomiting.

Labeling according to Directive 1999/45/EC
EC Symbols:
Xn Harmful.

EC Classification:
Flammable.
Harmful.

EC Risk Phrases:
R10 Flammable.
R20/21 Harmful by inhalation and in contact with skin.
R38 Irritating to skin.

EC Safety Phrases:
S2 Keep out of reach of children.
S25 Avoid contact with eyes.

2.3 Other Hazards
Health Hazards: Harmful by inhalation and in contact with skin. Vapours may cause drowsiness and dizziness. Slightly irritating to respiratory system. Irritating to skin. Moderately irritating to eyes. Harmful may cause lung damage if swallowed. Possibility of organ or organ system damage from prolonged exposure: see Chapter 11 for details. Target organ(s): Central nervous system (CNS).

Safety Hazards: Highly flammable. In use, may form flammable/explosive vapour-air mixture. Electrostastic charges may be generated during pumping. Electrostatic discharge may cause fire. Toxic to aquatic organisms.

Environmental Hazards: Toxics effects to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substance
Synonyms: o-Xylene
CAS No.: 78-04-7
INDEX No.: 661-022-00-9
EC Number: 202-422-2

3.2 Mixtures

Print Date 26.11.2010
MSDS_GB
Chapter 3: Composition/Information on Ingredients

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Information: Keep victim calm. Obtain medical treatment immediately.

Inhalation: DO NOT DELAY. Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

Skin Contact: If skin irritation or symptoms occur, transport to the nearest medical facility for additional treatment.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

Ingestion: If swallowed, do not induce vomiting. Transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

4.2 Most important symptoms/effects, acute & delayed

Eye irritation signs and symptoms may include burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include burning sensation, redness, swelling, and/or blistering. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache,

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EINECS</th>
<th>REACH Registration No.</th>
<th>Conc.</th>
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</thead>
<tbody>
<tr>
<td>ortho-Xylene</td>
<td>95-47-5</td>
<td>202-422-2</td>
<td>01-2119485822-30</td>
<td>100.00%W</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazard Class &amp; Category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ortho-Xylene</td>
<td>Flam. Liq., 3; Acute Tox., 4; Skin Irrit., 2;</td>
<td>H226, H332, H312, H315</td>
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<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EINECS</th>
<th>REACH Registration No.</th>
<th>Symbol(s)</th>
<th>R-phrase(s)</th>
<th>Conc.</th>
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<tbody>
<tr>
<td>ortho-Xylene</td>
<td>95-47-5</td>
<td>202-422-2</td>
<td>01-2119485822-30</td>
<td>Xn</td>
<td>R10, R22/21, R38</td>
<td>100.00%W</td>
</tr>
</tbody>
</table>
### Chapter 4: First Aid Measures

#### 4. FIRST AID MEASURES

##### 4.1 Description of first aid measures

**General Information**
- Keep victim calm. Obtain medical treatment immediately.
- DO NOT DELAY. Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

**Inhalation**
- Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

**Skin Contact**
- Immediately flush skin with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

**Eye Contact**
- Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

**Ingestion**
- If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache,
Chapter 4: First Aid Measures

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4.3 Indication of immediate medical attention and special treatment needed

- Nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- Potential for chemical pneumonitis. Potential for cardiac sensitisation, particularly in abuse situations. Hypoxia or negative inotropes may enhance these effects. Consider: oxygen therapy. Call a doctor or poison control center for guidance.

5. FIRE FIGHTING MEASURES

- Clear fire area of all non-emergency personnel.

5.1 Extinguishing Media

- Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Do not use water in a jet.

5.2 Special hazards arising from substance or mixture

- The vapor is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water. Carbon monoxide may be evolved if incomplete combustion occurs.

5.3 Advice for fire-fighters

- Keep full protective clothing and self-contained breathing apparatus.

Additional Information:

- Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

- Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Isolate hazard area and deny entry to unnecessary or unprotected personnel. Keep firefighting equipment within easy reach of the area.
- Shut off valves, if possible without personal risks. Remove all accessible sources of ignition in the surrounding area. Use appropriate containment of product and fire fighting water to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapor or to direct it to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Ventilate contaminated area thoroughly.

6.2 Environmental Precautions

- For large liquid spills (> 1 drum) transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

- For small liquid spills (< 1 drum) transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Additional Information:

- Keep adjacent containers cool by spraying with water.
Chapter 5: Fire Fighting Measures

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

5.1 Extinguishing Media

Extinguishing Media: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

5.2 Special hazards arising from substance or mixture

The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water. Carbon monoxide may be evolved if incomplete combustion occurs.

5.3 Advice for fire-fighters

Wear full protective clothing and self-contained breathing apparatus.

Additional Information: Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Isolate hazard area and deny entry to unnecessary or unprotected personnel. Keep upwind and keep out of low areas. Shut off leaks if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment of product and firefighting water to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct it to a safe location for example by using fog spray. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Ventilate contaminated area thoroughly.

6.2 Environmental Precautions

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum trucks to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. After residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
Chapter 6: Accidental Release Measures

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

6.2 Environmental Precautions

6.3 Methods and material for containment and clean up

Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low areas.

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Ventilate contaminated area thoroughly.

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
Chapter 6: Accidental Release Measures

Additional Advice:
- Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Vapour may form an explosive mixture with air. See Chapter 13 for information on disposal.

7. HANDLING AND STORAGE

General Precautions:
- Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For comprehensive advice on handling, product transfer, storage and leak clearing refer to the product supplier. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Extinguish any naked flames. Do not smoke. Remove ignition sources.
- Avoid sparks. Avoid contact with skin, eyes, and clothing.

7.1 Precautions for safe handling:
- Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid contact with skin and eyes.
- Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Bulk storage tanks should be diked (bunded). The vapour is heavier than air. Beware of accumulation in pits and confined spaces.

7.2 Conditions for safe storage, including any incompatibilities:
- Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Bulk storage tanks should be diked (bunded). The vapour is heavier than air. Beware of accumulation in pits and confined spaces.

7.3 Specific End Uses:
- Please refer to Ch16 and/or the annexes for the registered uses under REACH.

Additional Information:
- Ensure that all local regulations regarding handling and storage facilities are followed.
- Product Transfer:
  - Electrostrophic charges may be generated during pumping.
  - Electrostrophic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
  - Realised line velocity during pumping in order to avoid generation of electrostrophic discharge (≤ 1 m/sec until pipe submerged to twice its diameter, then ≤ 7 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Recommended Materials:
- For containers, or container linings use mild steel, stainless steel.

Unsuitable Materials:
- Natural, butyl, neoprene or nitrile rubbers.

Container Advice:
- Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:
- If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.
7. HANDLING AND STORAGE

General Precautions
Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. On guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid contact with skin, eyes, and clothing.

7.1 Precautions for safe handling
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities
Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Bulk storage tanks should be diked (bunded). The vapour is heavier than air. Beware of accumulation in pits and confined spaces.

7.3 Specific End Uses
Please refer to Ch16 and/or the annexes for the registered uses under REACH.

Additional Information
Ensure that all local regulations regarding handling and storage facilities are followed.

Product Transfer
Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<= 1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Recommended Materials
For containers, or container linings use mild steel, stainless steel.

Unsuitable Materials
Natural, butyl, neoprene or nitrile rubbers.

Container Advice
Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters
If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Additional Advice
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spills cannot be contained. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Vapour may form an explosive mixture with air. See Chapter 11 for information on disposal.

Additional Advice:
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spills cannot be contained. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Vapour may form an explosive mixture with air. See Chapter 11 for information on disposal.

Additional Advice:
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spills cannot be contained. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Vapour may form an explosive mixture with air. See Chapter 11 for information on disposal.
Chapter 8: Exposure Control/Personal Protection

7. HANDLING AND STORAGE

General Precautions
Avoid breathing vapours or contact with material. Only use in well-ventilated areas. Wash thoroughly after handling. For comprehensive advice on handling, product transfer, storage and leak clearing refer to the product supplier. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Extinguish any naked flames. Do not smoke. Remove ignition sources.

Precautions for safe handling
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities
Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Bulk storage tanks should be diked (bunded). The vapour is heavier than air. Beware of accumulation in pits and confined spaces.

Specific End Uses
Please refer to Ch16 and/or the annexes for the registered uses under REACH.

Additional Information
Ensure that all local regulations regarding handling and storage facilities are followed.

Product Transfer
Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Reduced line velocity during pumping in order to avoid generation of electrostatic discharge (>1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Recommended Materials
For containers, or container linings use mild steel, stainless steel.

Unsuitable Materials
Natural, butyl, neoprene or nitrile rubbers.

Container Advice
Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations without taking precautions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters
If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.
Safety Data Sheet

Occupational Exposure Limits

UK Workplace Exposure Limits

<table>
<thead>
<tr>
<th>Material Source Type</th>
<th>ppm</th>
<th>mg/m³</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ortho-xylene YECA</td>
<td>50</td>
<td>225</td>
<td></td>
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<tr>
<td>ortho-xylene STEL</td>
<td>100</td>
<td>441</td>
<td>Can be absorbed through the skin</td>
</tr>
</tbody>
</table>

Additional Information: Skin notation means that significant exposure can also occur by absorption of liquid through the skin and of vapour through the eyes or mucous membranes.

Derived No Effect Levels (DNEL):

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Route</th>
<th>Exposure Type (long-term/acute)</th>
<th>Application Area</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ortho-xylene</td>
<td>Inhalation</td>
<td>acute, systemic effects</td>
<td>Worker</td>
<td>442 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>acute, local effects</td>
<td>Worker</td>
<td>442 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Dermal</td>
<td>long term, systemic effects</td>
<td>Worker</td>
<td>3.182 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>long term, systemic effects</td>
<td>Worker</td>
<td>221 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>long term, local effects</td>
<td>Worker</td>
<td>221 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>acute, systemic effects</td>
<td>Consumer</td>
<td>280 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>acute, local effects</td>
<td>Consumer</td>
<td>280 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Dermal</td>
<td>long term, systemic effects</td>
<td>Consumer</td>
<td>1.872 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>long term, systemic effects</td>
<td>Consumer</td>
<td>65.3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>long term, systemic effects</td>
<td>Consumer</td>
<td>12.5 mg/kg</td>
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<tr>
<td></td>
<td>Inhalation</td>
<td>long term, local effects</td>
<td>Consumer</td>
<td>65.3 mg/m³</td>
</tr>
</tbody>
</table>

Predicted No Effect Concentration (PNEC)

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Chapter 8: Exposure Control/Personal Protection

General note: Where exposure scenarios are included in the Safety Data Sheet, this section should be read in conjunction with the use details given in the relevant exposure scenarios.

### 8.2 Exposure Controls

#### General Information

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Adequate explosion-proof ventilation to control airborne concentrations. Firewater monitors and deluge systems are recommended. Eye washes and showers for emergency use.

#### Occupational Exposure Controls

**Personal Protective Equipment**

- Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

**Eye Protection**

- Chemical splash goggles (chemical monogoggles). Approved to EU Standard EN166, AS/NZS:1337

**Hand Protection**

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection: Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

**Body Protection**

- Chemical resistant gloves/gauntlets, boots, and apron. Where risk of splashing or in spillage clean up, use chemical resistant one-piece overall with integral hood.

**Respiratory Protection**

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)] meeting EN14387.

---

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Route</th>
<th>Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>ortho-Xylene</td>
<td>Water</td>
<td>0.20 mg/l</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Sediment</td>
<td>14.33 mg/kg</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>2.41 mg/kg</td>
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</tr>
<tr>
<td>STP</td>
<td></td>
<td>5 mg/l</td>
<td>None</td>
</tr>
</tbody>
</table>

General note: Where exposure scenarios are included in the Safety Data Sheet, this section should be read in conjunction with the use details given in the relevant exposure scenarios.
Thermal hazards

Monitoring Methods

Where respiratory protective equipment is required, use a full-face mask. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Not applicable

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods, http://www.cdc.gov/niosh/mmam/cmmammenu.html.


Berufsgenossenschaftliches Institut für Arbeitssicherheit (BIA), Germany http://www.hvbg.de/d/bia/index.html.


Environmental Exposure Controls

Environmental exposure control measures

Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value or Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colourless, Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic</td>
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<tr>
<td>pH</td>
<td>Data not available</td>
</tr>
<tr>
<td>Boiling point</td>
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<tr>
<td>Melting/freezing point</td>
<td>&lt; 0 °C / &lt; 32 °F</td>
</tr>
<tr>
<td>Flash point</td>
<td>27 - 32 °C / 81 - 90 °F (Auto)</td>
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<tr>
<td>Explosion/Flammability</td>
<td>1 - 7.9 E9J/</td>
</tr>
<tr>
<td>Limits in air</td>
<td>ca. 405 °C / 790 °F (ASTM E-659) Data not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>ca. 405 °C / 790 °F (ASTM E-659) Data not available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>882 Pa at 20 °C / 77 °F Data not available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Data not available</td>
</tr>
<tr>
<td>Density</td>
<td>883 - 885 kg/m³ at 15 °C / 59 °F</td>
</tr>
<tr>
<td>Solubility in water</td>
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</tr>
<tr>
<td>Water solubility</td>
<td>ca. 0.2 kg/m³</td>
</tr>
<tr>
<td>Solubility in other solvents/substances partition</td>
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</tr>
<tr>
<td>n-octanol/water partition</td>
<td>3.12</td>
</tr>
</tbody>
</table>
Chapter 9: Physical and Chemical Properties

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

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<td>27 - 32 °C / 81 - 90 °F (Abel)</td>
</tr>
<tr>
<td>Explosion / Flammability</td>
<td>1 - 7.6 %V</td>
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<tr>
<td>Limits in air Auto-ignition temperature</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>882 Pa at 25 °C / 77 °F Data not available.</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Density</td>
<td>883 - 885 kg/m3 at 15 °C / 59 °F</td>
</tr>
<tr>
<td>Bulk density</td>
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<td>Water solubility</td>
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Chapter 9: Physical and Chemical Properties

<table>
<thead>
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<th>Physical and Chemical Properties</th>
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</thead>
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<tr>
<td><strong>Coefficient (log Pow)</strong></td>
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<tr>
<td><strong>Dynamic viscosity</strong></td>
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<tr>
<td><strong>Kinematic viscosity</strong></td>
</tr>
<tr>
<td><strong>Electrical conductivity</strong></td>
</tr>
<tr>
<td><strong>Evaporation rate (nBuAc=1)</strong></td>
</tr>
<tr>
<td><strong>Surface tension</strong></td>
</tr>
<tr>
<td><strong>Molecular weight</strong></td>
</tr>
<tr>
<td><strong>Hygroscopicity</strong></td>
</tr>
</tbody>
</table>

9.2 Other Information

| Stability | Stable. |

10. Stability and Reactivity

10.1 Reactivity

Stable under normal conditions of use.

10.2 Stability

Stable under normal conditions of use.

10.3 Hazardous Reactions

Avoid heat, sparks, open flames and other ignition sources. Prevent vapour accumulation.

10.4 Conditions to Avoid

Prevent contact with reactive substances.

10.5 Materials to Avoid

Strong oxidising agents.

10.6 Hazardous Decomposition Products

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

Other Information

Hazardous Polymerisation

No, hazardous, exothermic polymerisation cannot occur.

Sensitivity to Mechanical Impact

No, product will not become self-reactive.

11. Toxicological Information

11.1 Information on Toxicological effects

**Basis for Assessment**

Information given is based on product testing, and/or similar products, and/or components.

**Routes of Exposure**

Inhalation is the primary route of exposure although exposure may occur through skin and eye contact or following accidental ingestion.

**Acute Oral Toxicity**

May be harmful if swallowed. LD50 >2000 - <=5000 mg/kg, Rat.

**Acute Dermal Toxicity**

Harmful in contact with skin. LD50 = 1000 - <=5000 mg/kg.

**Acute Inhalation Toxicity**

Harmful if inhaled. LC50 = 10,0 - <= 20,0 mg/l /4 hours, Rat.

**Skin Irritation**

Causes skin irritation.

**Eye Irritation**

Causes serious eye irritation.

**Sensitisation**

Not expected to be a skin sensitizer.

**Aspiration hazard**

Aspiration into the lungs when swallowed or inhaled may cause serious, life-threatening reactions.

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Chapter 10: Stability and Reactivity

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under normal conditions of use.

10.2 Stability
Stable under normal conditions of use.

10.3 Hazardous Reactions
Stable under normal conditions of use.

10.4 Conditions to Avoid
Avoid heat, sparks, open flames and other ignition sources. Prevent vapour accumulation.

10.5 Materials to Avoid
Strong oxidising agents.

10.6 Hazardous Decomposition Products
Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

10.7 Other Information
No, hazardous, exothermical polymerization cannot occur.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects
Information given is based on product testing, and/or similar products, and/or components.

11.2 Basis for Assessment
Information on toxicological effects is based on product testing, and/or similar products, and/or components.

11.3 Routes of Exposure
Inhalation is the primary route of exposure although exposure may occur through skin and eye contact, or following accidental ingestion.

11.4 Acute Oral Toxicity
May be harmful if swallowed. LD50 >2000 - <=5000 mg/kg, Rat

11.5 Acute Dermal Toxicity
Harmful in contact with skin. LD50 >1000 - <=2000 mg/kg

11.6 Acute Inhalation Toxicity
Harmful if inhaled. LC50 > 10.0 - <= 20.0 mg/l / 4 hours, Rat

11.7 Skin Irritation
Causes skin irritation

11.8 Eye Irritation
Causes serious eye irritation

11.9 Sensitisation
Not expected to be skin sensitiser.

11.10 Aspiration hazard
Aspiration into the lungs when swallowed or inhaled may cause...
### 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity
- Stable under normal conditions of use.

#### 10.2 Stability
- Stable under normal conditions of use.

#### 10.3 Hazardous Reactions
- Stable under normal conditions of use.

#### 10.4 Conditions to Avoid
- Avoid heat, sparks, open flames and other ignition sources. Prevent vapour accumulation.

#### 10.5 Materials to Avoid
- Strong oxidising agents.

#### 10.6 Hazardous Decomposition Products
- Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

#### Other Information
- No, hazardous, exothermic polymerization cannot occur.
- No, product will not become self-reactive.

### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on Toxicological effects

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
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<tr>
<td><strong>Basis for Assessment</strong></td>
<td>Information given is based on product testing, and/or similar products, and/or components.</td>
</tr>
<tr>
<td><strong>Routes of Exposure</strong></td>
<td>Inhalation is the primary route of exposure although exposure may occur through skin and eye contact, or following accidental ingestion.</td>
</tr>
<tr>
<td><strong>Acute Oral Toxicity</strong></td>
<td>May be harmful if swallowed. LD50 &gt;2000 - &lt;=5000 mg/kg, Rat</td>
</tr>
<tr>
<td><strong>Acute Dermal Toxicity</strong></td>
<td>May be harmful in contact with skin. LD50 &gt;1000 - &lt;=2000 mg/kg</td>
</tr>
<tr>
<td><strong>Acute Inhalation Toxicity</strong></td>
<td>May be harmful if inhaled. LC50 &gt; 10,0 - &lt;= 20,0 mg/l / 4 hours, Rat</td>
</tr>
<tr>
<td><strong>Skin Irritation</strong></td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td><strong>Eye Irritation</strong></td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td><strong>Sensitisation</strong></td>
<td>Not expected to be a skin sensitiser.</td>
</tr>
<tr>
<td><strong>Aspiration hazard</strong></td>
<td>Aspiration into the lungs when swallowed or vomited may cause</td>
</tr>
</tbody>
</table>

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Chapter 11: Toxicological Information

12. ECeOLOGICAL INFORMATION

12.1 Toxicity

Basis for Assessment: Information given is based on product testing.

Acute Toxicity

Fish: Toxic: LL/EL/IL50 >1 - <=10 mg/l

Aquatic Invertebrates: Toxic: LL/EL/IL50 >1 - <=10 mg/l

Algae: Toxic: LL/EL/IL50 >1 - <=10 mg/l

Microorganisms: Practically non toxic: LL/EL/IL50 > 100 mg/l

Chronic Toxicity

Fish: 56 day NOEC/NOEL expected to be >1 mg/l (based on test data)

Aquatic Invertebrates: 21 day NOEC/NOEL expected to be >1 mg/l (based on test data)

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate significantly.

12.4 Mobility

Floats on water.

12.5 Result of the PBT assessment

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.6 Other Adverse Effects

In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Material Disposal: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate chemical pneumonitis which can be fatal.

Mutagenicity: Not mutagenic.

Carcinogenicity: Not expected to be carcinogenic.

Developmental Toxicity: Not a developmental toxicant.

Does not impair fertility.

Inhalation of vapours or mists may cause irritation to the respiratory system.

Central nervous system: repeated exposure affects the nervous system. Effects were seen at high doses only.

Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Mutagenicity: Not mutagenic.

Carcinogenicity: Not expected to be carcinogenic.

Reproductive and Developmental Toxicity: Not a developmental toxicant.

Specific target organ toxicity - single exposure

Inhalation of vapours or mists may cause irritation to the respiratory system.

Specific target organ toxicity - repeated exposure

Central nervous system: repeated exposure affects the nervous system. Effects were seen at high doses only.

Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Additional Information

Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Chapter 12: Ecological Information

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute Toxicity
- Fish: Toxic; LL/EL/IL50 >1 - <=10 mg/l
- Aquatic Invertebrates: Toxic; LL/EL/IL50 >1 - <=10 mg/l
- Algae: Toxic; LL/EL/IL50 >1 - <=10 mg/l
- Microorganisms: Practically non toxic; LL/EL/IL50 > 100 mg/l

Chronic Toxicity
- Fish: 56 day NOEC/NOEL expected to be >1 mg/l (based on test data)
- Aquatic Invertebrates: 21 day NOEC/NOEL expected to be >1 mg/l (based on test data)

12.2 Persistence and degradability
- Readily biodegradable.
- Oxidises rapidly by photo-chemical reactions in water.
- Does not bioaccumulate significantly.
- Floats on water.
- Adsorbs to soil and has low mobility.
- The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.3 Bioaccumulative potential
- Does not bioaccumulate significantly.

12.4 Mobility
- In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

12.5 Result of the PBT assessment
- The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.6 Other Adverse Effects
- In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Material Disposal
- Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
- Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate

Print Date 26.11.2010
Chapter 13: Disposal Considerations

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute Toxicity

Fish: Toxic; $ LL_{50} > 1 \text{ mg/l} $ to $ < 10 \text{ mg/l} $

Aquatic Invertebrates: Toxic; $ LL_{50} > 1 \text{ mg/l} $ to $ < 10 \text{ mg/l} $

Algae: Toxic; $ LL_{50} > 1 \text{ mg/l} $ to $ < 10 \text{ mg/l} $

Microorganisms: Practically non toxic; $ LL_{50} > 100 \text{ mg/l} $

Chronic Toxicity

Fish: 66 day NOEC/NOEL expected to be $ > 1 \text{ mg/l} $ (based on test data)

Aquatic Invertebrates: 21 day NOEC/NOEL expected to be $ > 1 \text{ mg/l} $ (based on test data)

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate significantly.

12.4 Mobility

Floats on water.

12.5 Result of the PBT assessment

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.6 Other Adverse Effects

In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Material Disposal: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate water.
### Chapter 13: Disposal Considerations

#### Container Disposal
- Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

#### Local Legislation
- Disposal should be in accordance with applicable regional, national, and local laws and regulations.

### 14. TRANSPORT INFORMATION

#### ADR
- **14.1 UN No.**: 1307
- **14.2 Proper shipping name**: Xylenes
- **14.3 Transport Hazard Class**: 3
- **14.4 Packing group**: B
- **14.5 Environmentally Hazardous**: No

#### RID
- **14.1 UN No.**: 1307
- **14.2 Proper shipping name**: Xylenes
- **14.3 Transport Hazard Class**: 3
- **14.4 Packing group**: B
- **14.5 Environmentally Hazardous**: No

#### Sea transport (IMDG Code):
- **14.1 UN No.**: UN 1307
- **14.2 Proper shipping name**: XYLENES
- **14.3 Transport Hazard Class**: 3
- **14.4 Packing group**: B
- **14.5 Environmentally Hazardous**: No
### Chapter 14: Transport Information

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<th>UN No.</th>
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<th>Packing group</th>
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<th>Hazard identification no.</th>
<th>Danger label (primary risk)</th>
<th>Environmentally Hazardous</th>
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</thead>
<tbody>
<tr>
<td>UN No.</td>
<td>1307</td>
<td>Xylenes</td>
<td>3</td>
<td>II</td>
<td>F1</td>
<td>30</td>
<td>3</td>
<td>No</td>
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<table>
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<tr>
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<tr>
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<td>30</td>
<td>3</td>
<td>No</td>
</tr>
</tbody>
</table>
Chapter 14: Transport Information

Sea (Annex II of MARPOL 73/78 and the IBC code)

Pollution Category: Y
Ship Type: 2
Product Name: Xylenes, Marpol Annex II, Pollution Category Y Melting point lower 0 deg C (ortho-Xylene mixture)

Special Precaution:
Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

16. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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

Other regulatory Information

Chemical Inventory Status

AICS: Listed.
DSL: Listed.
INCI: Listed.
EMCS (JP): Listed (3)-3.
TMCA: Listed.
PCCS (PH): Listed.

National Legislation

OE_HPV: Listed.

16. OTHER INFORMATION

R-phrases:

R10 Flammable.
R20/21 Harmful by inhalation and in contact with skin.
R38 Irritating to skin.

GHS Hazard statements

H226 Flammable liquid and vapor.
H304 May be fatal if swallowed and enters ansaues.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Print Date 26.11.2010
# Chapter 15: Regulatory Information

## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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

**Other regulatory information**

<table>
<thead>
<tr>
<th>Chemical Inventory Status</th>
<th>Listed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICS</td>
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</tr>
<tr>
<td>CRL</td>
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</tr>
<tr>
<td>INV (CN)</td>
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</tr>
<tr>
<td>EMCS (JP)</td>
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<tr>
<td>TSCA</td>
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<td>ENECs</td>
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<td>KECI (KR)</td>
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<tr>
<td>PICCS (PH)</td>
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</table>

### National Legislation

OE HPV

Listed.

## 16. OTHER INFORMATION

### R-phrases

<table>
<thead>
<tr>
<th>R-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R10</td>
<td>Flammable</td>
</tr>
<tr>
<td>R20/21</td>
<td>Harmful by inhalation and in contact with skin.</td>
</tr>
<tr>
<td>R38</td>
<td>Irritating to skin.</td>
</tr>
</tbody>
</table>

### GHS Hazard statements

<table>
<thead>
<tr>
<th>H-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor.</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters absorptions.</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

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MSDS_GB
Chapter 16: Other Information

16. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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

Other regulatory Information

Chemical Inventory Status
- AICS: Listed.
- DRE: Listed.
- INV (CN): Listed.
- TSQA: Listed.
- ENEDIS: Listed.
- PICCS (PH): Listed.

National Legislation
- OE_HPV: Listed.

16. OTHER INFORMATION

R-phrase(s)
- R10: Flammable.
- R20/21: Harmful by inhalation and in contact with skin.
- R38: Irritating to skin.

GHS Hazard statements
- H226: Flammable liquid and vapor.
- H304: May be fatal if swallowed and enters airways.
- H312: Harmful in contact with skin.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.

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Chapter 16: Other Information

Shell Chemicals

Safety Data Sheet

H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Identified Uses according to the Use Descriptor System

Uses - Worker
Title: Manufacture of substance
- Industrial

Uses - Worker
Use as an intermediate
- Industrial

Uses - Worker
Distribution of substance
- Industrial

Uses - Worker
Formulation & (re)packing of substances and mixtures
- Industrial

Uses - Worker
Uses in Coatings
- Industrial

Uses - Worker
Uses in Coatings
- Professional

Uses - Consumer
Title: Uses in Coatings
- Consumer

MSDS Version Number: 14/48
MSDS Effective Date: 26.11.2010
MSDS Revisions: A vertical bar (|) in the left margin indicates an amendment from the previous version.
MSDS Regulation: The content and format of this safety data sheet is in accordance with Regulation 1907/2006/EC.
MSDS Distribution: The information in this document should be made available to all who may handle the product.
Disclaimer: This information is based on our current knowledge and is intended to describe the product for the purposes of health,

Print Date 26.11.2010
safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
**Exposure Scenarios Annex**

---

**Title:** Exposure Scenario - Worker

**Exposure Scenario Title:** Manufacture of substance - Industrial

<table>
<thead>
<tr>
<th>Use Descriptor</th>
<th>Sector of Use: SU 3, SU8, SU9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Categories:</td>
<td>PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15</td>
</tr>
<tr>
<td>Environmental Release Categories:</td>
<td>ERC 1, ERC 4, ESVO, ESIRC 1.1.v1</td>
</tr>
</tbody>
</table>

**Scope of process:** Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

---

**Section 2:** Operational Conditions and Risk Management Measures

**Section 2.1:** Control of Worker Exposure

**Product Characteristics:**
- Physical form of product: Liquid, vapour pressure 0.5 – 10 kPa at STP
- Concentration of substance in product: Covers percentage substance in the product up to 100 % (unless stated differently)

**Frequency and Duration of Use:** Covers daily exposures up to 8 hours (unless stated differently)

**Other Operational Conditions affecting worker Exposure:** Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.

**Contributing scenarios:**
- Risk Management Measures
  - Avoid direct skin contact with product, identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately.
  - Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.
  - Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
  - General exposures (closed systems): No other specific measures identified
  - General exposures (closed systems) with sample collection: No other specific measures identified

---

*General note: In this guide we only show one ‘worker’ exposure scenario and one consumer exposure scenario. In reality there will be more.*
Exposure Scenario - Worker

SECTION 1
EXPOSURE SCENARIO TITLE

Title
Manufacture of substance

Use Descriptor
Sector of Use: SU 3, SU8, SU9

Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6a, PROC 8b, PROC 15

Environmental Release Categories: ERC 1, ERC 4, ESVOC

Scope of process
Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine, vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2
OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES

Section 2.1
Control of Worker Exposure

Product Characteristics

Physical form of product
Liquid, vapour pressure 0.5 - 10 kPa at STP

Concentration of substance in product
Covers percentage substance in the product up to 100 % (unless stated differently)

Frequency and Duration of use
Covers daily exposures up to 8 hours (unless stated differently)

Other Operational Conditions affecting worker Exposure
Assumes use at not more than 20°C above ambient temperature (unless stated differently).

Risk Management Measures

Contributing scenarios
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately.

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems)
No other specific measures identified

General exposures (closed systems) with sample collection with occasional controlled
No other specific measures identified
### Control of Environmental Exposure

<table>
<thead>
<tr>
<th>Substance</th>
<th>Fraction of EU tonnage used in region:</th>
<th>0.01%</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fraction of Regional tonnage used locally:</td>
<td>0.01%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual site tonnage (tonnes/year):</td>
<td>1.76E+06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum daily site tonnage (tonnes/day):</td>
<td>7.20E+05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency and Duration of Use</td>
<td>Continuous release, 300 days (max)</td>
<td></td>
</tr>
</tbody>
</table>

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**Ortho-xylene**

**Effective Date:** 26.11.2010

**Regulation:** 1907/2006/EC

**Print Date:** 26.11.2010

**MSDS_GB**
Environmental factors not influenced by risk management

Local fresh water dilution factor: 40
Local marine water dilution factor: 1.0

Other Operational Conditions affecting Environmental Exposure

Release fraction to air from process (initial release prior to RMM): 5.0E-03
Release fraction to wastewater from process (initial release prior to RMM): 3.0E-03
Release fraction to soil from process (initial release prior to RMM): 1.0E-04

Technical conditions and measures at process level (source) to prevent releases

- Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

- Prevent discharge of undissolved substance to or recover from onsite wastewater.
- Risk from environmental exposure is driven by wastewater treatment plant microbes.
- If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.
- Treat air emissions to provide a typical removal efficiency of (%): 90
- Treat onsite wastewater (prior to receiving water discharge) to provide the required onsite wastewater removal efficiency of (%): 93.6
- If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 93.6

Organisational measures to prevent/limit release from site

- Do not apply industrial sludge to natural soils.
- Sludge should be incinerated, contained or reclaimed.

Conditions and Measures related to municipal sewage treatment plant

- Estimated substance removal from wastewater via domestic sewage treatment (%): 93.6
- Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 93.6
- Maximum allowable site tonnage (t/year) based on release following total wastewater treatment removal (t/year): 9.4E+06
- Assumed domestic sewage treatment plant flow (m³/d): 10,000

Conditions and Measures related to external treatment of waste for disposal

- During manufacturing no waste of the substance is generated.

Conditions and measures related to external recovery of waste

- During manufacturing no waste of the substance is generated.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 - Environment

Used EUSES model.
**Section 4 - Health**

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**Section 4.2 - Environment**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

<table>
<thead>
<tr>
<th>Section 4</th>
<th>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SECTION 4 - Health</td>
</tr>
<tr>
<td>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SECTION 4.2 - Environment</td>
</tr>
<tr>
<td>Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a>).</td>
<td></td>
</tr>
</tbody>
</table>
### Exposure Scenarios Annex

#### Section 1

**Exposure Scenario Title:** Uses in Coatings - Consumer

**Use Description:**
- **Sector of Use:** SU 21
- **Product Categories:** PC1, PC4, PC8a (excipient only), PC9a, PC16, PC18, PC23, PC24, PC31, PC34
- **Environmental Release Categories:** ERC 8A, ERC 8D, ESVOC Sp/ERC E.3c.v1

**Scope of process:**
Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

#### Section 2

**Operational Conditions and Risk Management Measures**

**Section 2.1 Control of Consumer Exposure**

**Product Characteristics**
- **Physical form of product:** Liquid, vapour pressure > 10 Pa
- **Concentration of substance in product:** Covers concentration up to (%): 100%
- **Amounts used**:
  - Unless otherwise stated:
    - For each use event, covers amount up to (g): 13,800
    - Covers skin contact area (cm²): 857.5
    - Covers use up to (times/day of use): 1
    - Covers use up to (hours/event): 6

**Frequency and Duration of Use**
- Unless otherwise stated:
  - Covers use at ambient temperatures.
  - Covers use in room size of 20m³.

**Other Operational conditions affecting consumer exposure**
- Unless otherwise stated:
  - Covers use at ambient temperatures.
  - Covers use in room size of 20m³.

**Product Categories**
- **Adhesives, Sealants, Glues, hobby use.**
  - **Operational Conditions and Risk Management Measures**:
    - Covers concentrations up to 30%
    - Covers use up to 365 days/year
    - Covers use up to 1 times/day of use
    - Covers skin contact area 35.73 cm²
    - For each use event, covers amount up to 9 g
    - Covers use in room size of 20 m³
    - Covers exposure up to a measurement

- **Adhesives, Sealants, Glass DIY-use (carpet glue, tile**
  - **Operational Conditions and Risk Management Measures**:
    - Covers concentrations up to 3%
### Exposure Scenarios Annex

<table>
<thead>
<tr>
<th>Scenario Description</th>
<th>Concentration Ranges</th>
<th>Use Duration</th>
<th>Use Frequency</th>
<th>Skin Contact Area</th>
<th>Use Event Amount</th>
<th>Room Size</th>
<th>Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesives, Sealants. Glue</td>
<td>Covers concentrations up to 24%</td>
<td>Covers use up to 6 days/year</td>
<td>Covers use up to 1 times/day of use</td>
<td>Covers skin contact area 35.73 cm²</td>
<td>For each use event, covers amount up to 85.05 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 1.00 hours/event</td>
</tr>
<tr>
<td>Sealants. Glue from spray.</td>
<td>Covers concentrations up to 30%</td>
<td>Covers use up to 365 days/year</td>
<td>Covers use up to 1 times/day of use</td>
<td>Covers skin contact area 35.73 cm²</td>
<td>For each use event, covers amount up to 75 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 4.00 hours/event</td>
</tr>
<tr>
<td>Anti-Freeze and De-icing products. Washing car window.</td>
<td>Covers concentrations up to 1%</td>
<td>Covers use up to 365 days/year</td>
<td>Covers use up to 1 times/day of use</td>
<td>Covers skin contact area 35.73 cm²</td>
<td>For each use event, covers amount up to 0.5 g</td>
<td>Covers use in room size of 34 m³</td>
<td>Covers exposure up to 0.02 hours/event</td>
</tr>
<tr>
<td>Anti-Freeze and De-icing products. Pouring into radiator.</td>
<td>Covers concentrations up to 10%</td>
<td>Covers use up to 365 days/year</td>
<td>Covers use up to 1 times/day of use</td>
<td>Covers skin contact area 428.00 cm²</td>
<td>For each use event, covers amount up to 2,000 g</td>
<td>Covers use in room size of 34 m³</td>
<td>Covers exposure up to 0.17 hours/event</td>
</tr>
<tr>
<td>Anti-Freeze and De-icing products. Lock de-icer.</td>
<td>Covers concentrations up to 50%</td>
<td>Covers use up to 365 days/year</td>
<td>Covers use up to 1 times/day of use</td>
<td>Covers skin contact area 214.40 cm²</td>
<td>For each use event, covers amount up to 4 g</td>
<td>Covers use in room size of 34 m³</td>
<td>Covers exposure up to 0.25 hours/event</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Product Category</th>
<th>Concentration Coverage</th>
<th>Use Coverage</th>
<th>Contact Area Coverage</th>
<th>Amount Coverage</th>
<th>Room Size Coverage</th>
<th>Exposure Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biocidal Products (e.g. Disinfectants, pestcontrol), (excipient only). Laundry and dish washing products.</td>
<td>Covers concentrations up to 5%</td>
<td>Covers use up to 365 days/year</td>
<td>Covers skin contact area 887.50 cm²</td>
<td>For each use event, covers amount up to 15 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 20 hours/event</td>
</tr>
<tr>
<td>Biocidal Products (e.g. Disinfectants, pestcontrol), (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).</td>
<td>Covers concentrations up to 5%</td>
<td>Covers use up to 128 days/year</td>
<td>Covers skin contact area 428.00 cm²</td>
<td>For each use event, covers amount up to 27 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 0.33 hours/event</td>
</tr>
<tr>
<td>Biocidal Products (e.g. Disinfectants, pestcontrol), (excipient only). Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).</td>
<td>Covers concentrations up to 15%</td>
<td>Covers use up to 128 days/year</td>
<td>Covers skin contact area 428.00 cm²</td>
<td>For each use event, covers amount up to 35 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 0.17 hours/event</td>
</tr>
<tr>
<td>Coatings and Paints, Thinners, paint removers. Waterborne latex wall paint.</td>
<td>Covers concentrations up to 1.5%</td>
<td>Covers use up to 4 days/year</td>
<td>Covers skin contact area 428.75 cm²</td>
<td>For each use event, covers amount up to 2.760 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 2.20 hours/event</td>
</tr>
<tr>
<td>Coatings and Paints, Thinners, paint removers. Solvent rich, high solid, water borne paint.</td>
<td>Covers concentrations up to 27.5%</td>
<td>Covers use up to 6 days/year</td>
<td>Covers skin contact area 428.75 cm²</td>
<td>For each use event, covers amount up to 27.5 g</td>
<td>Covers use in room size of 20 m³</td>
<td>Covers exposure up to 6.33 hours/event</td>
</tr>
<tr>
<td>Scenario</td>
<td>Use Event</td>
<td>Concentration</td>
<td>Use Duration</td>
<td>Skin Contact</td>
<td>Swallowed Amount</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------</td>
<td>---------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Coatings and Paints, Thinners, paint removers. Aerosol spray can.</td>
<td>Covers up to 744 g</td>
<td>Covers concentrations up to 25%</td>
<td>Covers use up to 2 days/year</td>
<td>Covers use in room size of 20 m³</td>
<td>1 g</td>
<td></td>
</tr>
<tr>
<td>Coatings and Paints, Thinners, paint removers. Removers (paint-, glue-, wall-paper-, sealant-remover).</td>
<td>Covers up to 215 g</td>
<td>Covers concentrations up to 50%</td>
<td>Covers use up to 2 days/year</td>
<td>Covers use in room size of 20 m³</td>
<td>1 g</td>
<td></td>
</tr>
<tr>
<td>Fillers, Putties, Fillers and putty.</td>
<td>Covers up to 50%</td>
<td>Covers concentrations up to 2%</td>
<td>Covers use up to 12 times/year</td>
<td>Covers use in room size of 20 m³</td>
<td>10 g</td>
<td></td>
</tr>
<tr>
<td>Fillers, Putties, Plasters and floor equalizers.</td>
<td>Covers up to 1.9%</td>
<td>Covers concentrations up to 2%</td>
<td>Covers use up to 12 times/year</td>
<td>Covers use in room size of 20 m³</td>
<td>10 g</td>
<td></td>
</tr>
<tr>
<td>Fillers, Putties, Modeling clay.</td>
<td>Covers up to 1%</td>
<td>Covers concentrations up to 2%</td>
<td>Covers use up to 125 days/year</td>
<td>Covers use in room size of 20 m³</td>
<td>10 g</td>
<td></td>
</tr>
<tr>
<td>Finger paints Finger paints.</td>
<td>Covers up to 8%</td>
<td>Covers concentrations up to 2%</td>
<td>Covers use up to 100 times/day</td>
<td>Covers use in room size of 20 m³</td>
<td>0.1 g</td>
<td></td>
</tr>
</tbody>
</table>

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### Exposure Scenarios Annex

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Exposure Scenarios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-metal-surface treatment products. Waterborne latex wall paint.</td>
<td>Covers use in room size of 20 m³. Covers exposure up to 0.03 hours/event. Covers skin contact area 428.75 cm². For each use event, covers amount up to 2,760 g.</td>
</tr>
<tr>
<td>Non-metal-surface treatment products. Solvent rich, high solid, water borne paint.</td>
<td>Covers use in room size of 20 m³. Covers exposure up to 2.20 hours/event. Covers skin contact area 428.75 cm². For each use event, covers amount up to 744 g.</td>
</tr>
<tr>
<td>Non-metal-surface treatment products. Aerosol spray can.</td>
<td>Covers use in room size of 20 m³. Covers exposure up to 2.20 hours/event. Covers skin contact area 857.50 cm². For each use event, covers amount up to 491 g.</td>
</tr>
<tr>
<td>Non-metal-surface treatment products. Removers (paint-, glue-, wall paper-, sealant-remover).</td>
<td>Covers use in room size of 20 m³. Covers exposure up to 2.00 hours/event. Covers skin contact area 71.40 cm². For each use event, covers amount up to 40 g.</td>
</tr>
<tr>
<td>Ink and Toners. Inks and toners.</td>
<td>Covers use in room size of 20 m³. Covers exposure up to 2.20 hours/event. Covers skin contact area 50.50 cm². For each use event, covers amount up to 16 g.</td>
</tr>
<tr>
<td>Leather tanning, dye, finishing, impregnation and care products. Polishes.</td>
<td>Covers use in room size of 20 m³. Covers exposure up to 2.20 hours/event. Covers skin contact area 50.50 cm². For each use event, covers amount up to 16 g.</td>
</tr>
<tr>
<td>Product Category</td>
<td>Concentration</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Wax / Cream (floor, furniture, shoes)</td>
<td>up to 50%</td>
</tr>
<tr>
<td>Leather tanning, dye, finishing, impregnation and care products, Polishes, spray (furniture, shoes)</td>
<td>up to 50%</td>
</tr>
<tr>
<td>Lubricants, Greases and Release Products, Liquids</td>
<td>up to 100%</td>
</tr>
<tr>
<td>Lubricants, Greases and Release Products, Pastes</td>
<td>up to 20%</td>
</tr>
<tr>
<td>Lubricants, Greases and Release Products, Sprays</td>
<td>up to 50%</td>
</tr>
<tr>
<td>Polishes and Wax Blends, Polishes, wax / cream (floor, furniture, shoes)</td>
<td>up to 50%</td>
</tr>
</tbody>
</table>
### Section 2.2 Control of Environmental Exposure

**Substance is a unique structure.**

**Readily biodegradable.**

**Amounts used**

| Fraction of EU tonnage used in region: | 0.1 |
| Fraction of Regional tonnage used locally: | 0.103 |
| Annual site tonnage (tonnes/year): | 14 |
| Maximum daily site tonnage (kg/day): | 38 |

### Frequency and Duration of Use

**Continuous release.**

**Emission Days (days/year):** 365

**Environmental factors not influenced by risk management**

- Local freshwater dilution factor: 10
- Local marine water dilution factor: 10

**Wet Operational Conditions affecting Environmental Exposure**

| Release fraction to air from wide dispersive use (regional only): | 1.0E-02 |
| Release fraction to wastewater from wide dispersive use: | 1.0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 5.0E-03 |

**Estimated substance removal from wastewater via domestic sewage treatment plan (%)**

| Estimated substance removal from wastewater via domestic sewage treatment plan (%) | 55.6 |
| Maximum allowable site tonnage (metric) based on release following total wastewater treatment removal (kg/day): | 1.3E+04 |
| Assumed domestic sewage treatment plant flow (m³/d): | 2.000 |

**Conditions and Measures related to municipal sewage treatment plan**

**Conditions and Measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations.
### SECTION 3
#### EXPOSURE ESTIMATION

**Section 3.1 - Health**

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

**Section 3.2 - Environment**

Used EUSES model.

### SECTION 4
#### GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

**Section 4.1 - Health**

Predicted exposures are not expected to exceed the DN(EL) when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**Section 4.2 - Environment**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.