MATERIAL SAFETY DATA SHEET

Section 1: IDENTIFICATION

XYLENE

Synonyms – Dimethylbenzene, Xylenes

Product Code – XYL20P, XYL20M

Recommended use – Pathology laboratory solvent.

Point of Care Diagnostics t/a POCD Scientific
ABN: 93 067 939 824
Unit 14/76 Reserve Rd
Artarmon NSW 2064
☎ 1800 640 075 | ☎ 02 9437 1399

Australian Emergency Services: 000 (24 hours) Australian Poisons Information Centre: 131 126 (24 hours)

Section 2: HAZARDS IDENTIFICATION

Classified as a Hazardous substance according to criteria of NOHSC.
Classified as a Dangerous good according to the ADG Code for the Transport of Dangerous Goods by Road and Rail.

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

S Phases
S2 - Keep out of reach of children.
S24/25 - Avoid contact with skin and eyes.

Section 3: COMPOSITION INFORMATION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene, mixed isomers</td>
<td>1330-20-7</td>
<td>≥70%</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>10 - ≤30%</td>
</tr>
</tbody>
</table>

Section 4: FIRST AID MEASURES

Eye contact
Flush with copious amounts of water for at least 15 minutes. Seek medical attention immediately.

Skin contact
Remove contaminated clothing and wash skin thoroughly with soap and water for at least 15 minutes. Seek medical attention.

Inhalation
Remove patient to fresh air. Apply artificial respiration if not breathing. Administer oxygen if breathing is difficult. If rapid recovery does not happen, seek medical attention.

Ingestion
DO NOT INDUCE vomiting. Give copious amounts of water to drink. Seek urgent medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

First aid facilities
Eye wash station, safety shower and First Aid Kit.
**Advice to Doctor**  

**Section 5: FIREFIGHTING MEASURES**

**Suitable 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.

**Hazards for combustion products**  
Toxic gasses may be emitted.

**Special protective precautions and equipment for fire fighters**  
Clear area of all non-emergency personnel. Vapours may travel or be moved by air currents and be ignited by pilot lights, other flames, sparks, smoking, electrical equipment, static charge or other ignition sources. Self-contained breathing apparatus (SCBA) and full protective clothing required for fire-fighting personnel.

**Hazchem code**  
3[Y]

**Section 6: ACCIDENTAL RELEASE MEASURES**

**Emergency procedures**  
Keep unnecessary people away. Isolate hazard area and avoid contact with spilled material. Stay upwind, keep out of low areas. Do not walk or touch spilt material unless wearing personal protection. Prevent spillage from entering drains and waterways.

**Clean up methods**  
Shut off ignition sources, no flares, smoking or flames in hazard area. Stop leak if you can do it without risk. Water spray may reduce vapour; but it may not prevent ignition in closed spaces.

- **SMALL SPILLS:** (<1 drum)  
  Transfer by mechanical means 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.

- **LARGE 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.

**Section 7: HANDLING AND STORAGE**

**Precautions for safe handling**  
Avoid inhaling vapour and/or mists. Avoid contact with skin, eyes, and clothing. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. 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. Handling Temperature: Ambient.

**Conditions of safe storage**  
Bulk storage tanks should be diked (bunded). Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Must be stored in a diked (bunded) wellventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. The vapour is heavier than air. Beware of accumulation in pits and confined spaces. Storage Temperature: Ambient.
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.

Section 8: EXPOSURE CONTROLS/PERSOINAL PROTECTION

<table>
<thead>
<tr>
<th>Material</th>
<th>Source</th>
<th>Type</th>
<th>ppm</th>
<th>mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>AU OEL</td>
<td>TWA</td>
<td>100</td>
<td>434</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>125</td>
<td>543</td>
</tr>
<tr>
<td>Xylene, Mixed Isomers</td>
<td>AU OEL</td>
<td>TWA</td>
<td>80</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150</td>
<td>655</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.

Biological Limit Values

<table>
<thead>
<tr>
<th>Material</th>
<th>Determinant</th>
<th>Sampling Time</th>
<th>BEI</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene, mixed Isomers</td>
<td>Methylhippuric acids in urine</td>
<td>End of shift</td>
<td>1.5g/g creatinine</td>
<td>ACGIH (2003)</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Mandelic acid in urine</td>
<td>End of shift at end of work week</td>
<td>1.5g/g creatinine</td>
<td>ACGIH (2003)</td>
</tr>
</tbody>
</table>

Personal Protective Equipment

PVC or rubber apron and gloves. Goggles or face-shield. Avoid breathing of vapours/gases. Select and use respirators in accordance with AS/NZS 1715/1716. When vapours/gases exceed the exposure standards then the use of a half-face respirator with organic vapour cartridge is recommended. For high concentration use an atmosphere-supplied, positive pressure demand self-contained or airline breathing apparatus, complying with the requirements of AS/NZS 1715.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. 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 EN141. 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.

The level of protection and types of controls necessary will vary.

Date of issue: May 2011
**Exposure Controls:**- 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 explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended. Firewater monitors and deluge systems are recommended. Eye washes and showers for emergency use.

**Hand Protection:** Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) 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, and dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

**Eye Protection:** Chemical splash goggles.

**Protective Clothing:** 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.

**Monitoring Methods:** 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.

**Environmental Exposure Controls:** Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear colourless liquid.</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic (threshold 0.27ppm)</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>0.839 mmHg (1atm)</td>
</tr>
<tr>
<td>Vapour density</td>
<td>3.7</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>136-145°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>-48°C</td>
</tr>
<tr>
<td>Solubility</td>
<td>0.175kg/m³ (in water – miscible in other solvents)</td>
</tr>
<tr>
<td>Density</td>
<td>870kg/m³ at 15°C</td>
</tr>
<tr>
<td>Information for flammable materials</td>
<td>Flammable liquid</td>
</tr>
<tr>
<td>Upper and lower flammable limits in air</td>
<td>1.0-7% by volume in air</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>21-27°C (closed cup)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>432-530°C</td>
</tr>
</tbody>
</table>

### Section 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under normal conditions of use. Reacts violently with strong oxidising agents.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Heat, flames, sparks, ignition sources, incompatibles. Prevent vapour accumulation.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Strong oxidising agents.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>A mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds.</td>
</tr>
</tbody>
</table>
Hazardous reactions

Polymerisation will not occur.

Section 11: TOXICOLOGICAL INFORMATION

HEALTH EFFECTS

Acute Oral Toxicity: Low toxicity: LD50 >2000 mg/kg, Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Acute Dermal Toxicity: Low toxicity: LD50 >2000 mg/kg Classified as harmful under EC criteria., Rabbit

Acute Inhalation Toxicity: Low toxicity: LC50 >20 mg/l / 4 hours, Rat Classified as harmful under EC criteria. High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

Skin Irritation: Irritating to skin.

Eye Irritation: Moderately irritating to eyes (but insufficient to classify).

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

Sensitisation: Not expected to be a skin sensitiser.

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

Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss.

Mutagenicity: Not mutagenic.

Carcinogenicity: Mixed xylenes contain ethylbenzene, which has shown limited evidence of a carcinogenic effect.

Reproductive and Developmental Toxicity: Does not impair fertility. Causes foetotoxicity in animals at doses which are maternally toxic.

Additional Information: Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Acute Toxicity
Fish : Toxic: 1 < LC/EC/IC50 <= 10 mg/l
Aquatic Invertebrates : Toxic: 1 < LC/EC/IC50 <= 10 mg/l
Algae : Toxic: 1 < LC/EC/IC50 <= 10 mg/l

Persistence and degradability
Readily biodegradable. Oxidises rapidly by photo-chemical reactions in air.

Mobility
If product enters soil, it will be highly mobile and may contaminate groundwater. Floats on water.

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

Bioaccumulative potential
Does not bio-accumulate significantly.

Section 13: DISPOSAL CONSIDERATIONS

Disposal methods and containers
Refer to local authority guidelines. Advise flammable nature. Should be suitable for disposal by licensed contractor.
Section 14: TRANSPORT INFORMATION

*Classified as dangerous goods by the criteria of the Australian Dangerous Goods Code.*

<table>
<thead>
<tr>
<th>UN Number</th>
<th>1307</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN Proper shipping name</td>
<td>Xylenes</td>
</tr>
<tr>
<td>Class and subsidiary risk</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Special precautions</td>
<td>Flammable</td>
</tr>
<tr>
<td>Hazchem code</td>
<td>3[Y]</td>
</tr>
</tbody>
</table>

Section 15: REGULATORY INFORMATION

- Poison Schedule – S6

Section 16: OTHER INFORMATION

**Release Information**

Date of preparation 24 May 2011

Issue Number 1

**References**


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