SAFETY DATA SHEET
Xylene – Item no. 60-058
according to 1907/2006/EC, Article 31

Date: 28/02/2014

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

- 1.1 Product identifier
- Trade name Xylene
- Article number: 1000453900001
- CAS Number: 1330-20-7
- EC number: 215-353-7
- Index number: 601-022-00-9

- 1.2 Relevant identified uses of the substance or mixture and uses advised against
  - No further relevant information available.
  - Application of the substance / the preparation Solvents

- 1.3 Company / undertaking identification
  Manufacturer, importer, other undertaking
  UCY business services & trading GmbH
  Contact information:
  Street address: Am Villepohl 4
  Postcode and post office: DE-53347 Alfter
  Telephone number: +49 228 2428 732
  Facsimile: +49 228 2428 731
  E-mail address: sales@ucy-energy.com

- 1.4. Emergency telephone
  Telephone number, name and address
  +49 163 8141789
  UCY business services & trading GmbH
  Am Villepohl 4, DE-53347 Alfter
  In case of intoxication (consultation in German and English)
  Poisoning emergency number (Berlin)
  Tel. +49 (0) 30 30686 790

  Emergency telephone number (consultation in German and English)
  Poisoning emergency number (Berlin)
  Tel. +49 (0) 30 19240

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008
  Flammable, liquid and vapour.
  STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.
SAFETY DATA SHEET
Xylene – Item no. 60-058
according to 1907/2006/EC, Article 31

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  Xi; Harmful
  R20/21: Harmful by inhalation and in contact with skin.
  Xi: Irritant
  R38: Irritating to skin.
  R10: Flammable.

- Information concerning particular hazards for human and environment:
  Human health hazards: Aspiration into lungs may cause chemical pneumonitis which can be fatal. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
  Safety hazards: Combustible. Electronic charges may be generated during handling. May form flammable/explosive vapour-air mixture.
  Environmental hazards: Not classified as dangerous under EC-criteria

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
  The substance is classified and labelled according to the CLP regulation.
- Hazard pictograms
  GHS02 GHS07 GHS08

- Signal word Danger
- Hazard statements
  H226 Flammable liquid and vapour.
  H312+H332 Harmful in contact with skin or if inhaled.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H304 May be fatal if swallowed and enters airways.
- Precautionary statements
  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P243 Take precautionary measures against static discharge.
  P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
  P305+P361+P333 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P331 Do NOT induce vomiting.
  P521+P531 If skin irritation occurs: Get medical advice/attention.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
SAFETY DATA SHEET
Xylene – Item no. 60-058
according to 1907/2006/EC, Article 31

- Additional information: Void
- 2.3 Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.1 Substances
  Xylo mixture of isomers
  (1,2-., 1,3- and 1,4-dimethyl benzene and ethyl benzene. Content of benzene: max. 0,01 %)
- CAS No. Designation:
  1330-20-7 Xylene, mixed isomers, pure
  100-41-4 Ethylbenzene
- Identification no(s):
  - EC number: 215-535-7
  - Index number: 601-022-00-9

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- General advice:
  Take affected persons out of danger area and instruct to lie down.
  Take affected persons into the open air.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
  Instantly remove any clothing soaked by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation
  Provide fresh-air circulation. If symptoms continue, consult a doctor. In case of respiratory failure or breathing irregularities, commence resuscitation or oxygen inhalation and immediately consult a doctor. In case of unconsciousness, place and transport the patient in a recovery position.
- After skin contact
  Remove contaminated clothing immediately. Wash affected areas with plenty of water and soap. If irritation continues, contact a doctor.
- After eye contact
  Rinse immediately opened eye for several minutes under running water. Then consult doctor.
- After swallowing
  Do not provoke vomiting. Vomiting while unconscious, may cause aspiration and may lead to suffocation. Give plenty of water to drink, but only if the patient is fully conscious. Contact a doctor.
  If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- 4.2 Most important symptoms and effects, both acute and delayed
  No further relevant information available.
- Information for doctor
  Renew lipid coating of the skin in order to protect against dermatitis.
  Cleaning of the stomach should only be carried out with endotracheal intubation. Danger of aspiration.
  Symptomatic treatment.
  Danger
  Danger of pneumonia.
  Danger of disturbed cardiac rhythm (cardiac sensitisation, particularly in abuse situations).
- 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.
SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents
  CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- For safety reasons unsuitable extinguishing agents
  Water with a full water jet.

- 5.2 Special hazards arising from the substance or mixture
  Can form explosive gas-air mixtures. In case of incomplete combustion carbon monoxide can arise. Fumes are heavier than air and distributed over ground. Inflammation is possible from a far distance.
  Avoid contact with combustible substances
  hazard determining fire gases: carbon monoxide, soot.
  organic decomposition products
  Do not inhale explosion and combustion gases.

- 5.3 Advice for firefighters
- Protective equipment: Wear full protective suit with self-contained breathing apparatus.
- Additional information
  Endangered containers in the surrounding area should be cooled with a water-hose.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Wear protective equipment and keep unprotected persons away.
  Extinguish naked flames. Remove flammable sources. No smoking. Avoid sparks. Avoid contact with skin, eyes and clothing. Avoid inhalation of fumes. Air contaminated rooms thoroughly. Protect against electrostatic sparks.

- 6.2 Environmental precautions:
  Prevent material from reaching sewage system, holes and cellars.
  Prevent from spreading (e.g. by damming-in or oil barriers).
  If large amounts are released, the authorities must be informed.

- 6.3 Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose of contaminated material as waste according to item 13.
  Ensure adequate ventilation.

- 6.4 Reference to other sections
  See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  Keep containers tightly sealed.
  Keep good ventilation/exhaustion at the workplace. Avoid repeated or long-term skin contact.
  Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

- Information about protection against explosions and fires:
  Keep ignition sources away. Do not smoke.
  Protect against electrostatic charges.
  Use only in explosion-proof area.
  Use explosion-proof apparatus / fittings and spark-proof tools.
  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.
SECTION 8: Exposure controls/personal protection

- Additional information about design of technical systems:
  Room ventilation i.e. vacuum suction. Measures to be taken against electro-static sparks.

- 8.1 Control parameters

- Components with critical values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Name</th>
<th>WEL</th>
<th>Short-term value:</th>
<th>Long-term value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1350-20-7 xylene, mixed isomers, pure (50-100%)</td>
<td>441 mg/m³</td>
<td>100 ppm</td>
<td>220 mg/m³, 50 ppm</td>
</tr>
</tbody>
</table>

- DNELs

<table>
<thead>
<tr>
<th>Route</th>
<th>DNEL (population)</th>
<th>DNEL (worker)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1.6 mg/kg bw/day (Long-term - systemic effects)</td>
<td>108 mg/kg bw/day (Long-term - systemic effects)</td>
</tr>
<tr>
<td>Dermal</td>
<td>1.6 mg/kg bw/day (Long-term - systemic effects)</td>
<td>180 mg/kg bw/day (Long-term - systemic effects)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>14.8 mg/m³ (Long-term - systemic effects)</td>
<td>174 mg/m³ (Acute - systemic and local effects)</td>
</tr>
<tr>
<td></td>
<td>77 mg/m³ (Long-term - systemic effects)</td>
<td>289 mg/m³ (Acute - systemic and local effects)</td>
</tr>
</tbody>
</table>

- PNECs

Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances.

- Additional information: The lists that were valid during the compilation were used as basis.

- 8.2 Exposure controls

- Personal protective equipment

- General protective and hygienic measures
  Keep away from food, beverages and fodder.
  Instantly remove any soiled and impregnated garments.
  Wash hands during breaks and at the end of the work.
  Avoid contact with the eyes and skin.
  Gases, fumes and aerosols should not be inhaled.

- Breathing equipment:
  In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
  Short term: filter A2

- Protection of hands: Solvent resistant gloves

- Material of gloves
  Fluorocarbon rubber (Viton)
  Nitrile rubber, NBR

  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material
  Material of gloves is recommended for a short-term single use to protect from splashes. For permanent usage contact manufacturer of gloves.

- Eye protection: Tightly sealed safety glasses.

- Body protection:
  Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.
**SECTION 9: Physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong>:</td>
<td>Fluid</td>
</tr>
<tr>
<td><strong>Colour</strong>:</td>
<td>Colourless</td>
</tr>
<tr>
<td><strong>Smell</strong>:</td>
<td>aromatic</td>
</tr>
<tr>
<td><strong>pH-value</strong>:</td>
<td>not applicable</td>
</tr>
<tr>
<td><strong>Melting point/Melting range</strong>:</td>
<td>≤ -25 °C</td>
</tr>
<tr>
<td><strong>Boiling point/Boiling range</strong>:</td>
<td>136-145 °C</td>
</tr>
<tr>
<td><strong>Flash point</strong>:</td>
<td>25 °C (IP 170(Abel))</td>
</tr>
<tr>
<td><strong>Ignition temperature</strong>:</td>
<td>460 °C</td>
</tr>
<tr>
<td><strong>Danger of explosion</strong>:</td>
<td>Product is not explosive. However, formation of explosive air/steam mixtures is possible.</td>
</tr>
<tr>
<td><strong>Critical values for explosion</strong>:</td>
<td></td>
</tr>
<tr>
<td><strong>Lower</strong>:</td>
<td>1.0 Vol %</td>
</tr>
<tr>
<td><strong>Upper</strong>:</td>
<td>7.0 Vol %</td>
</tr>
<tr>
<td><strong>Vapour pressure at 20 °C</strong>:</td>
<td>ca. 10 hPa</td>
</tr>
<tr>
<td><strong>Density at 15 °C</strong>:</td>
<td>ca. 0.87 g/cm³</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water at 20 °C</strong>:</td>
<td>0.173 g/l</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong>:</td>
<td>3.12-3.20 log POW</td>
</tr>
<tr>
<td><strong>Viscosity</strong>:</td>
<td></td>
</tr>
<tr>
<td><strong>Dynamic at 20 °C</strong>:</td>
<td>0.01 mPa</td>
</tr>
<tr>
<td><strong>Kinematic at 20 °C</strong>:</td>
<td>ca. 0.9 mm²/s</td>
</tr>
<tr>
<td><strong>Other information</strong>:</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

**SECTION 10: Stability and reactivity**

<table>
<thead>
<tr>
<th>Reactivity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10.1 Reactivity</strong></td>
<td></td>
</tr>
<tr>
<td><strong>10.2 Chemical stability</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Thermal decomposition / conditions to be avoided</strong>:</td>
<td>Can be distilled without decomposing at normal pressure. To avoid: heat, flames, sparks.</td>
</tr>
<tr>
<td><strong>10.3 Possibility of hazardous reactions</strong></td>
<td>Violent reaction with strong oxidizing agents.</td>
</tr>
<tr>
<td><strong>10.4 Conditions to avoid</strong></td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td><strong>10.5 Incompatible materials</strong></td>
<td>Strong acids and oxidizing agents.</td>
</tr>
<tr>
<td><strong>10.6 Hazardous decomposition products</strong></td>
<td>Thermal decomposition can produce a variety of compounds, the precise nature of which will depend on the decomposition conditions. Formation of carbon monoxide and carbon dioxide in case of fire.</td>
</tr>
</tbody>
</table>
SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity:

<table>
<thead>
<tr>
<th></th>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>8700 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>2000 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative LC 50 / 4 h</td>
<td>10-20 mg/l (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
- on the skin:  
  Irritant for skin and mucous membranes.  
  The product has a strong degreasing effect on the skin.
- on the eye: Irritant effect.
- Sensitization: No sensitizing effect known.

- Other information (about experimental toxicology):
  Aspiration hazard: Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
  Mutagenicity: Not mutagenic.
  Carcinogenicity: An increased tumour incidence has been observed in experimental animals; the significance of this finding to man is unknown. (Ethylbenzene)

Reproductive and Developmental Toxicity: Does not impair fertility. Not expected to be a developmental toxicant.
Specific target organ toxicity - single exposure: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death. Inhalation of vapours or mists may cause irritation to the respiratory system.
Specific target organ toxicity - repeated exposure: Harmful; danger of serious damage to health by prolonged exposure through inhalation.
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.
Additional Information: Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.
- Subacute to chronic toxicity:
  - Aspiration hazard:
    May be fatal if swallowed and enters airways. Based on physical and chemical properties of the product.
  - Additional toxicological information:
    Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Aspiration into the lungs may cause chemical pneumonitis which can be fatal.
    Vapours in higher concentrations have an irritating effect on the upper respiratory tract. Very high concentrations may cause dizziness, headaches and unconsciousness.

SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity:

|  |  
|---|---|
| EC 50 / 48 h | 1-10 mg/l (Aquatic invertebrates) |
| LC 50 / 72 h | 1-10 mg/l (Algae) |
| | 2-8 mg/l (Selenastrum capricornutum) |
| LC 50 / 96 h | 86 mg/l (Leucosar idus) |
| | 1-10 mg/l (Fish) |
- 12.2 Persistence and degradability
  Readily biodegradable.
  Oxidises rapidly by photo-chemical reactions in air.
- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.
- Additional ecological information:
- General notes:
  Danger to drinking water if even small quantities leak into soil.
  Water hazard class 2 (Assessment by list): hazardous for water.
  Do not allow product to reach ground water, water bodies or sewage system.
- 12.5 Results of PBT and vPvB assessment
  PBT: Not applicable.
  vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  The following advice is related to new material and not to any processed products. In case of a mixture with other products other disposal methods may become necessary. If in doubt seek advice from product supplier or from local authorities.
- Recommendation
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  Must be specially treated under adherence to official regulations.
  Contact manufacturer for recycling information.
- Waste disposal key number:
  Since 01/01/99 the waste code numbers have not only been product-related but are also essentially application-related. The valid waste code number of the application can be obtained from the European waste catalogue.
- Uncleaned packaging: Disposal must be made according to official regulations.
- Recommendation:
  Rented packaging: After optimal emptying, close immediately and return to the supplier without cleaning. Care should be taken that no other materials get into the packaging.
  Other containers: After complete emptying and cleaning, send to be reconditioned or recycled.
  Caution: Leftovers in the containers may cause the risk of explosion.
  Uncleaned containers should not be perforated, cut or welded.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR, IMDG, IATA 1307
- 14.2 UN proper shipping name
  - ADR 1307 XYLENES
  - IMDG, IATA XYLENES
- 14.3 Transport hazard class(es)
  - ADR
    - Class 3 (F1) Flammable liquids.
    - Label 3
SAFETY DATA SHEET
Xylene – Item no. 60-058
according to 1907/2006/EC, Article 31

- IMDG, IATA
  - Class 3 Flammable liquids.
  - Label 3

- 14.4 Packing group
  - ADR, IMDG, IATA III

- 14.5 Environmental hazards:
  - Marine pollutants: no

- 14.6 Special precautions for user
  - Kerner Number: Warning: Flammable liquids.
  - EMS Number: F-E-S-D

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

- UN "Model Regulation": UN1807, XYLENES, 3, III

SECTION 15: Regulatory information

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

- National regulations

- Information about limitation of use: Employment restrictions concerning young persons must be observed.

- Decree to be applied in case of technical fault: Materialgroup 3 (flammable liquids) mixing-swell to be observed

- Technical instructions (air):

<table>
<thead>
<tr>
<th>Class</th>
<th>Share in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>NK</td>
<td>50-100</td>
</tr>
</tbody>
</table>


- Water hazard class: Water hazard class 2 (Assessment by list): hazardous for water.

- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing data specification sheet: see item 1: Informing department

- Contact:
  - Frau Sorpil Adamoglu
  - Herr Joachim Wiebusch
  - Herr G. März

- Abbreviations and acronyms:
  - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  - ICAO: International Civil Aviation Organization
  - LEV: Local Exhaust Ventilation
  - RPE: Respiratory Protective Equipment
  - RCE: Risk Characterization Ratio (RCE = PEC/PNEC)
  - ADR: Accord européen sur le transport des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association

UCY ENERGY GROUP - UCY business services & trading GmbH, Am Villepohl 4, D-53347 Alfter
Register court: AG Bonn, HRB 13459, Tax number: 222/5719/235, Managing Director: Thilo Schneider
SAFETY DATA SHEET
Xylene – Item no. 60-058
according to 1907/2006/EC, Article 31

Further information:

UCY ENERGY GROUP
UCY business services & trading (Germany) GmbH
Am Villepohl 4
DE-53347 Alfter
Phone: +49 228 2428 732
E-mail: thilo.schneider@ucy-energy.com
Thilo Schneider, +49 163 8141789