

SAFETY DATA SHEET



XYLENE FEEDSTOCK

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

1.1 Product identifier

Product name : XYLENE FEEDSTOCK

EC number : 297-401-8

REACH Registration number

Registration number

01-2119486794-20-0003

01-2119486794-20-0005

01-2119486794-20-0008

CAS number : 93571-75-6

Product description : petroleum naphtha

1.2 Relevant identified uses of the substance or mixture and uses advised against

Intended Use : Chemical feedstock

Identified uses

Distribution of substance

Use in rubber production and processing

Manufacture of substance

Use as a fuel - Industrial

Use as a fuel - Professional

Use as a fuel - Consumer

Use as an intermediate

Manufacture of other substances

Formulation and (re)packing of substances and mixtures

Use in coatings - Industrial

Use in cleaning agents - Industrial

1.3 Details of the supplier of the safety data sheet

Supplier : ExxonMobil Petroleum & Chemical BV
POLDERDIJKWEG
Antwerpen B-2030 Belgium

Supplier General Contact : + 32 2 239 3111
e-mail address of person responsible for this SDS : SDS-CC@exxonmobil.com

SDS Internet Address : www.sds.exxonmobil.com

1.4 Emergency telephone number

**National advisory body/
Poison Centre** : (+32)70 245 245

**24 Hour Emergency
Telephone** : +32 2 808 32 37 / +1-703-527-3887 (CHEMTREC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : UVCB

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 2, H225

Skin Irrit. 2, H315

Muta. 1B, H340

Carc. 1B, H350

Repr. 2, H361fd

STOT SE 3, H336

Asp. Tox. 1, H304

Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H225 - Highly flammable liquid and vapour.
- H304 - May be fatal if swallowed and enters airways.
- H315 - Causes skin irritation.
- H336 - May cause drowsiness or dizziness.
- H340 - May cause genetic defects.
- H350 - May cause cancer.
- H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
- H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention :

- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P240 - Ground and bond container and receiving equipment.
- P241 - Use explosion-proof electrical, ventilating or lighting equipment.
- P242 - Use non-sparking tools.
- P243 - Take action to prevent static discharges.
- P261 - Avoid breathing vapour.
- P264 - Wash thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.

Response :

- P301 + P331, P310 - IF SWALLOWED: Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.
- P302 + P352 - IF ON SKIN: Wash with plenty of water.
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- P304 + P312, P340 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Remove person to fresh air and keep comfortable for breathing.
- P308 + P313 - IF exposed or concerned: Get medical advice or attention.
- P332 + P313 - If skin irritation occurs: Get medical advice/attention.
- P362 + P364 - Take off contaminated clothing and wash it before reuse.
- P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.
- P391 - Collect spillage.

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SECTION 2: Hazards identification

- Storage** : P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Keep cool.
P405 - Store locked up.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazardous ingredients** : aromatic hydrocarbons, c7-12, c8-rich
- Supplemental label elements** : Not applicable.
- Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : 72, 48

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII :

PBT	P	B	T	vPvB	vP	vB
N/A	N/A	N/A	Yes	N/A	N/A	N/A

Other hazards which do not result in classification : None known.

Nota : This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3: Composition/information on ingredients

3.1 Substances : UVCB

Product/ingredient name	Identifiers	% by weight	Classification	Specific Conc. Limits, M-factors and ATEs	Type
aromatic hydrocarbons, c7-12, c8-rich	REACH #: 01-2119486794-20 EC: 297-401-8 CAS: 93571-75-6	100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Muta. 1B, H340 Carc. 1B, H350 Repr. 2, H361d STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	-	[1]
naphthalene	REACH #: 01-2119561346-37 EC: 202-049-5 CAS: 91-20-3	<10	Flam. Sol. 2, H228 Acute Tox. 4, H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 500 mg/kg M [Acute] = 1 M [Chronic] = 1	[1]
toluene	REACH #: 01-2119471310-51 EC: 203-625-9 CAS: 108-88-3	3	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 (central nervous system (CNS)) Asp. Tox. 1, H304	-	[1]

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SECTION 3: Composition/information on ingredients

n-hexane	EC: 203-777-6 CAS: 110-54-3	<3	Aquatic Chronic 3, H412 Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 (peripheral nervous system) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	STOT RE 2, H373: C ≥ 5%	[1]
benzene	REACH #: 01-2119447106-44 EC: 200-753-7 CAS: 71-43-2	0.1 - 1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 (blood) Asp. Tox. 1, H304 Aquatic Chronic 3, H412 See Section 16 for the full text of the H statements declared above.	-	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[1] Constituent

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

Nota :

Hydrogen sulfide (H₂S) may be present in the material in trace quantities (by weight) and, when present, may accumulate to toxic or flammable concentrations in enclosed spaces such as tanks or tanker/railcar headspaces.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 10 minutes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Get medical attention.

SECTION 4: First aid measures

- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
Respiratory and eye irritation, coughing, a sensation of dryness and pain in the nose, and loss of consciousness.
Numbness, muscle cramps, weakness and paralysis that may be delayed.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.
- Specific treatments** : No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

- Specific hazards arising from the chemical** : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Aldehydes, hydrogen sulphide, Incomplete combustion products, Oxides of carbon, Smoke, Fume, sulfur oxides

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Use standard firefighting procedures and consider the hazards of other involved materials. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Assure an extended cooling down period to prevent re-ignition. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow

SECTION 6: Accidental release measures

material to evaporate. If the Flash Point exceeds the Ambient Temperature by 10 deg C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. Seek the advice of a specialist before using dispersants. Warn other shipping. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container. Harmful amounts of H₂S may be present. Avoid breathing vapours, spray or mists. The toxic and olfactory (sense of smell) fatigue properties of hydrogen sulfide require that air monitoring alarms and respiratory protection be used where the concentration might be expected to reach a harmful level, such as in an enclosed space, heated transport vessel, or in a spill or leak situation.

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

Static Accumulator : This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

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SECTION 7: Handling and storage

Named substances

Name	Notification and MAPP threshold	Safety report threshold
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2500 tonne	25000 tonne

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c E2	5000 tonne 200 tonne	50000 tonne 500 tonne

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
aromatic hydrocarbons, c7-12, c8-rich	ExxonMobil (COMPANY) STEL: 200 ppm (Total Hydrocarbons). Form: Vapour and aerosol. TWA 8 hours: 100 ppm (Total Hydrocarbons). Form: Vapour and aerosol..
naphthalene	Limit values (Belgium, 12/2023) Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 53 mg/m ³ . STEL 15 minutes: 15 ppm. STEL 15 minutes: 80 mg/m ³ . EU OEL (Europe, 1/2022) TWA 8 hours: 10 ppm. TWA 8 hours: 50 mg/m ³ . ACGIH TLV (United States, 1/2024) Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 52 mg/m ³ .
toluene	Limit values (Belgium, 12/2023) Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 77 mg/m ³ . STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m ³ . EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 192 mg/m ³ . TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m ³ . STEL 15 minutes: 100 ppm. ACGIH TLV (United States, 1/2024) Ototoxicant. TWA 8 hours: 20 ppm.

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SECTION 8: Exposure controls/personal protection

n-hexane	<p>Limit values (Belgium, 12/2023) TWA 8 hours: 20 ppm. TWA 8 hours: 72 mg/m³.</p> <p>EU OEL (Europe, 1/2022) TWA 8 hours: 72 mg/m³. TWA 8 hours: 20 ppm.</p> <p>ACGIH TLV (United States, 1/2024) Absorbed through skin. TWA 8 hours: 50 ppm.</p>
benzene	<p>Limit values (Belgium, 12/2023) Absorbed through skin. TWA 8 hours: 0.5 ppm. TWA 8 hours: 1.65 mg/m³.</p> <p>EU OEL (Europe, 10/2019) Absorbed through skin. TWA 8 hours: 0.5 ppm. TWA 8 hours: 1.65 mg/m³.</p> <p>ACGIH TLV (United States, 1/2024) Absorbed through skin. TWA 8 hours: 0.02 ppm.</p> <p>ExxonMobil (COMPANY) Absorbed through skin. STEL 15 minutes: 1 ppm. TWA 8 hours: 0.2 ppm.</p>
hydrogen sulphide	<p>[Air contaminant - Decomposition product(s)]</p> <p>Limit values (Belgium, 12/2023) TWA 8 hours: 1.64 ppm. TWA 8 hours: 2.3 mg/m³. STEL 15 minutes: 4 ppm. STEL 15 minutes: 5.61 mg/m³.</p> <p>EU OEL (Europe, 1/2022) TWA 8 hours: 7 mg/m³. TWA 8 hours: 5 ppm. STEL 15 minutes: 14 mg/m³. STEL 15 minutes: 10 ppm.</p> <p>ACGIH TLV (United States, 1/2024) TWA 8 hours: 1 ppm. STEL 15 minutes: 5 ppm.</p> <p>ExxonMobil (COMPANY) STEL 15 minutes: 10 ppm. STEL 15 minutes: 14 mg/m³. TWA 8 hours: 5 ppm. TWA 8 hours: 7 mg/m³.</p>

Hydrogen sulfide (H₂S) may be present in the material in trace quantities (by weight) and, when present, may accumulate to toxic or flammable concentrations in enclosed spaces such as tanks or tanker/railcar headspaces. The ExxonMobil OEL for H₂S is 5 ppm (8-hr TWA) and 10 ppm for 15 min STEL.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following:
 European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

[DNELs/DMELs](#)

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Type	Exposure	Value	Population	Effects
aromatic hydrocarbons, c7-12, c8-rich toluene	DNEL	Long term Inhalation	840 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	180 mg/m ³	General population	Local
	DNEL	Long term Dermal	384 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	226 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	8.13 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	56.5 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	192 mg/m ³	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
toluene	Marine water	0.68 mg/l	-
	Sewage treatment plant	13.61 mg/l	-
	Fresh water	0.68 mg/l	-
	Marine water sediments	16.39 mg/kg dwt	-
	Fresh water sediment	16.39 mg/kg dwt	-
	Soil	2.89 mg/kg	-

8.2 Exposure controls

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

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

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): Viton, minimum 0.71 mm thickness or comparable protective barrier material
CEN standards EN 420 and EN 374 provide general requirements and lists of glove types.

SECTION 8: Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Positive-pressure, air-supplied respirator in areas where H₂S vapours may accumulate is recommended.
European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Pale yellow
- Odour** : Petroleum/Solvent
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : >35°C (>95°F) [ASTM D86]
- Flash point** : Closed cup: <23°C (<73.4°F) [IP 170/70]
- Evaporation rate** : Not available.
- Flammability** : Flammable liquids - Category 2
- Lower and upper explosion limit** : Lower: 0.6%
Upper: 8%
- Vapour pressure** : 30 to 1800.15 mm Hg [37.8 °C]
- Relative vapour density** : >1 [Air = 1]
- Relative density** : <1
- Density** : 0.62 to 0.88 g/cm³ [15°C (59°F)]
- Solubility in water** : Negligible
- Partition coefficient n-octanol/water (log Pow)** : >3.5
- Auto-ignition temperature** : >250°C (>482°F)
- Decomposition temperature** : Not available.
- Viscosity** : <1 cSt [40 °C]

Particle characteristics

- Median particle size** : Not applicable.

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SECTION 9: Physical and chemical properties

9.2 Other information

No data available

SECTION 10: Stability and reactivity

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

10.2 Chemical stability : The product is stable.

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

10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.

10.5 Incompatible materials : Reactive or incompatible with the following materials: oxidising materials, Halogens, strong acids, Strong oxidisers, Alkalies

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

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
aromatic hydrocarbons, c7-12, c8-rich	LC50 Inhalation Vapour	Rat	>5000 mg/m ³	4 hours
naphthalene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>0.4 mg/l	4 hours
	LD50 Oral	Mouse	533 mg/kg	-

Conclusion/Summary

Inhalation : Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403

Dermal : Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402

Oral : Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
naphthalene	500	N/A	N/A	N/A	N/A
benzene	2500	N/A	N/A	N/A	N/A

Irritation/Corrosion

Conclusion/Summary

Skin : Irritating to the skin. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404

SECTION 11: Toxicological information

- Eyes** : May cause mild, short-lasting discomfort to eyes. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
- Respiratory** : Negligible hazard at ambient/normal handling temperatures. No end point data for material. Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.

Respiratory or skin sensitization

Conclusion/Summary

- Skin** : Not expected to be a skin sensitizer. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
- Respiratory** : Not expected to be a respiratory sensitizer. No end point data for material.

Mutagenicity

- Conclusion/Summary** : May cause genetic defects. No end point data for material. Based on assessment of the components.

Carcinogenicity

- Conclusion/Summary** : May cause cancer. No end point data for material. Based on assessment of the components.

Reproductive toxicity

- Conclusion/Summary** : May damage fertility. May damage the unborn child. No end point data for material. Based on assessment of the components.

Specific target organ toxicity (single exposure)

- Conclusion/Summary** : May cause drowsiness or dizziness. No end point data for material.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Target organs
aromatic hydrocarbons, c7-12, c8-rich	Not applicable.	-

- Conclusion/Summary** : Not expected to cause organ damage from prolonged or repeated exposure. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412 453

Aspiration hazard

Product/ingredient name	Result
aromatic hydrocarbons, c7-12, c8-rich	Category 1

- Conclusion/Summary** : May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material. Data available.

Information on likely routes of exposure : Not available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

No known endocrine disrupting properties that affect human health

11.2.2 Other information

- Contains** : HYDROGEN SULPHIDE: Chronic health effects due to repeated exposures to low levels of H₂S have not been established. High level (700 ppm) acute exposure can result in sudden death. High concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of overexposure to H₂S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucous membranes and the respiratory system and have been implicated in some eye damage. NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to

SECTION 11: Toxicological information

humans is uncertain. BENZENE: Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies. N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown. TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

Product : High vapour concentrations are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Petroleum naphtha: Carcinogenic in animal tests. Chronic inhalation studies resulted in liver tumours in female mice and kidney tumours in male rats. Neither result considered significant for human health risk assessment by United States EPA and others. Did not cause mutations in-vitro. Inhalation of vapours did not result in reproductive or developmental effects in test animals. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Exposure to this material, or one of its components, in situations where there is the potential for high levels, such as in confined spaces or with abuse, may result in abnormal heart rhythm (arrhythmia). High-level exposure to hydrocarbons (above occupational exposure limits) may initiate arrhythmia in a worker that is undergoing stress or is taking a heart-stimulating substance such as epinephrine, a nasal decongestant, or an asthma or cardiovascular drug. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Section 12. Ecological information

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

12.1 Toxicity

Product/ingredient name	Duration	Species	Result
aromatic hydrocarbons, c7-12, c8-rich	72 hours	Algae - <i>Pseudokirchneriella subcapitata</i>	Acute EL50 1 to 1000 mg/l data for similar materials
	48 hours	daphnia - <i>Daphnia magna</i>	Acute EL50 1 to 100 mg/l data for similar materials
	96 hours	Fish - <i>Fish</i>	Acute LL50 1 to 100 mg/l data for similar materials
	72 hours	Algae - <i>Pseudokirchneriella subcapitata</i>	Chronic NOEL 1 to 100 mg/l data for similar materials
	21 days	daphnia - <i>Daphnia magna</i>	Chronic NOEL 1 to 10 mg/l data for similar materials

Conclusion/Summary

Acute toxicity : Toxic to aquatic life.
Chronic toxicity : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

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Section 12. Ecological information

Product/ingredient name	Test	Result	Qualifier	Media
aromatic hydrocarbons, c7-12, c8-rich	Ready Biodegradability	<60 % - 28 days	data for similar materials	water

Biodegradability : Material -- Expected to be inherently biodegradable

Atmospheric Oxidation : Majority of components -- Expected to degrade rapidly in air

12.3 Bioaccumulative potential

Conclusion/Summary : Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

12.4 Mobility in soil

Mobility : High molecular wt. component -- Low potential to migrate through soil. Low molecular wt. component -- Moderate potential to migrate through soil. Majority of components -- Highly volatile, will partition rapidly to air. Moderate potential to migrate through soil. Not expected to partition to sediment and wastewater solids.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
aromatic hydrocarbons, c7-12, c8-rich	N/A	N/A	N/A	Yes	N/A	N/A	N/A

12.6 Endocrine disrupting properties

No known endocrine disrupting properties that affect the environment

12.7 Other adverse effects

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

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

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

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)

Waste code	Waste designation
05 01 99	wastes not otherwise specified

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

Packaging

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SECTION 13: Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1268	UN1268	UN1268	UN1268
14.2 UN proper shipping name	PETROLEUM DISTILLATES, N.O.S.	PETROLEUM DISTILLATES, N.O.S.	PETROLEUM DISTILLATES, N.O.S.	Petroleum distillates, n.o.s.
14.3 Transport hazard class(es)	3	3	3	3
Label(s) / Mark(s)				
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 33
Limited quantity 1 L
Special provisions 640D, 664
Tunnel code (D/E)
- ADN** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Special provisions 640D
 CMR, N2
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-E, S-E
 Flash point <23 °C C.C.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
Special provisions A3

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SECTION 14: Transport information

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : 72, 48
on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Other EU regulations

Explosive precursors : Not applicable.

Seveso Directive

This product is controlled under the Seveso Directive.

Named substances

Name
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

Danger criteria

Category
P5c E2

National regulations

Book VI carcinogenic agents annex VI.2-1 - VI.2-3

Ingredient name	Status
hydrocarbures polycycliques aromatiques	Listed

Inventory list

Australia inventory (AIIC) : Not determined.
Canada inventory (DSL-NDSL) : Not determined.
China inventory (IECSC) : Not determined.
Japan inventory (CSCL) : Not determined.
Japan inventory (Industrial Safety and Health Act) : Not determined.
New Zealand Inventory of Chemicals (NZIoC) : Not determined.
Philippines inventory (PICCS) : Not determined.

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SECTION 15: Regulatory information

Korea inventory (KECI) : Not determined.

Taiwan Chemical Substances Inventory (TCSI) : Not determined.

United States inventory (TSCA 8b) : Not determined.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- SGG = Segregation Group
- vPvB = Very Persistent and Very Bioaccumulative

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

Classification	Justification
Flam. Liq. 2, H225	Expert judgment
Skin Irrit. 2, H315	Expert judgment
Muta. 1B, H340	Expert judgment
Carc. 1B, H350	Expert judgment
Repr. 2, H361fd	Expert judgment
STOT SE 3, H336	Expert judgment
Asp. Tox. 1, H304	Expert judgment
Aquatic Chronic 2, H411	Expert judgment

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H228	Flammable solid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

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SECTION 16: Other information

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 1A	CARCINOGENICITY - Category 1A
Carc. 1B	CARCINOGENICITY - Category 1B
Carc. 2	CARCINOGENICITY - Category 2
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Sol. 2	FLAMMABLE SOLIDS - Category 2
Muta. 1B	GERM CELL MUTAGENICITY - Category 1B
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

Date of issue/ Date of revision : 2 August 2024

Date of previous issue : 4 April 2024

Version : 1.02

Product code : 1272188

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Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Distribution of substance

List of use descriptors : **Identified use name:** Distribution of substance
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ERC06a, ERC06b, ERC06c, ERC06d, ERC07

Environmental contributing scenarios : **General exposures** - ERC04, ERC06a, ERC06b, ERC06c, ERC06d, ERC07

Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
General exposures (closed systems) - PROC01, PROC02, PROC03
Process sampling - PROC03
Laboratory activities - PROC15
Bulk closed loading and unloading - PROC08b
Equipment cleaning and maintenance - PROC08a
Storage - PROC02
Bulk closed loading - PROC08b

Processes and activities covered by the exposure scenario	: Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 51 000 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.002 Maximum daily site tonnage (kg/day): 170 000 kg/day Regional use tonnage (tonnes/year): 25 000 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 300 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.001 Release fraction to soil from process (initial release prior to RMM): 0.00001 Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

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20/81

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of ≥ 0 % Risk from environmental exposure is driven by freshwater. Treat air emission to provide a typical removal efficiency of 90 % Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ 83.3 %
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	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 670 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 95.8 %
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 treatment and disposal of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle substance within a closed system. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

With sample collection / Outdoor

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 4: Process sampling

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Sample via a closed loop or other system to avoid exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Laboratory activities

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Bulk closed loading and unloading

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 7: Equipment cleaning and maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Organisational measures to prevent/limit releases, dispersion and exposure	: Clear spills immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 8: Storage

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.

PC XYLENE FEEDSTOCK (EU)	Distribution of substance
Technical conditions and measures at process level (source) to prevent release : Ensure operation is undertaken outdoors. Store substance within a closed system.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene :	Assumes a good basic standard of occupational hygiene is implemented
Contributing scenario controlling worker exposure for 9: Bulk closed loading	
Product characteristics :	Liquid
Concentration of substance in mixture or article :	Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure :	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.
Ventilation control measures :	Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene :	Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
Exposure estimation and reference to its source - Environment: 1: General exposures	
Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: Not available.
Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities	
Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.
Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)	
Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.
Exposure estimation and reference to its source - Workers: 4: Process sampling	
Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.
Exposure estimation and reference to its source - Workers: 5: Laboratory activities	
Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 6: Bulk closed loading and unloading

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Equipment cleaning and maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Bulk closed loading

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	<p>: Further details on scaling and control technologies are provided in SPERC factsheet. 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.</p> <p>Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.</p> <p>Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.</p>
Health	<p>: Available hazard data do not enable the derivation of a DNEL for carcinogenic effects.</p> <p>Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.</p> <p>Available hazard data do not support the need for a DNEL to be established for other health effects.</p> <p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.</p> <p>Risk management measures are based on qualitative risk characterisation.</p> <p>Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use in rubber production and processing

List of use descriptors : **Identified use name:** Use in rubber production and processing
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC09, PROC15
Sector of end use: SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ERC06d

Environmental contributing scenarios : **General exposures** - ERC04, ERC06d

Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC09, PROC15
General exposures (closed systems) - PROC01, PROC02, PROC03
Material transfers - PROC08b
Bulk weighing - PROC02
Laboratory activities - PROC15
Equipment maintenance - PROC08a
Small scale weighing - PROC09
Storage - PROC02

Processes and activities covered by the exposure scenario	: Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 680 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 1 Maximum daily site tonnage (kg/day): 34 000 kg/day Regional use tonnage (tonnes/year): 680 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 20 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.01 Release fraction to soil from process (initial release prior to RMM): 0.0001 Release fraction to wastewater from process (initial release prior to RMM): 0.003
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of $\geq 37.1\%$ Risk from environmental exposure is driven by freshwater sediment. Treat air emission to provide a typical removal efficiency of 0% Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 97.4\%$
Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m^3/day): $2\,000\ \text{m}^3/\text{day}$ Estimated substance removal from wastewater via municipal sewage treatment: 95.8% Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): $34\,000\ \text{kg}/\text{day}$ Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 97.4%
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.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle substance within a closed system. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

Outdoor

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 4: Material transfers

Closed systems

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Store substance within a closed system.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Bulk weighing

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 6: Laboratory activities

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 7: Equipment maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Ventilation control measures	: Provide adequate ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Organisational measures to prevent/limit releases, dispersion and exposure	: Clear spills immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 8: Small scale weighing

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Ventilation control measures	: Carry out in a vented booth or extracted enclosure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 9: Storage

Outdoor

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Store substance within a closed system.
Ventilation control measures	: Provide adequate ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
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Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: ESVOC SPERC 4.19.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 4: Material transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Bulk weighing

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Laboratory activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Equipment maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Small scale weighing

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Further details on scaling and control technologies are provided in SPERC factsheet. 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 air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. 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.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Manufacture of substance
List of use descriptors : **Identified use name:** Manufacture of substance
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Sector of end use: SU03, SU08, SU09, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01
Environmental contributing scenarios : **General exposures - ERC01**
Health Contributing scenarios : **General measures applicable to all activities - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15**
General exposures (closed systems) - PROC01, PROC02, PROC03
Laboratory activities - PROC15
Bulk transfers - PROC08b
Equipment cleaning and maintenance - PROC08a
Storage - PROC02

Processes and activities covered by the exposure scenario	: Manufacture of the substance or use as an intermediate, process chemical or extracting agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 600 000 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.027 Maximum daily site tonnage (kg/day): 2 000 000 kg/day Regional use tonnage (tonnes/year): 22 000 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 300 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.05 Release fraction to soil from process (initial release prior to RMM): 0.0001 Release fraction to wastewater from process (initial release prior to RMM): 0.003
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 94.7 % Risk from environmental exposure is driven by freshwater sediment. Treat air emission to provide a typical removal efficiency of 90 % Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 99.8 %

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Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m ³ /day): 10 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 2 000 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 99.8 %
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.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained batch processes. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

With sample collection / Batch process / Continuous process

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Technical conditions and measures at process level (source) to prevent release : Ensure operation is undertaken outdoors.
Handle substance within a closed system.
Sample via a closed loop or other system to avoid exposure.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 4: Laboratory activities

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Technical conditions and measures at process level (source) to prevent release : Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Bulk transfers

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Equipment cleaning and maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Organisational measures to prevent/limit releases, dispersion and exposure	: Clear spills immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 7: Storage

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Ensure operation is undertaken outdoors. Store substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
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Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: ESVOC SPERC 1.1.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Laboratory activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Bulk transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Equipment cleaning and maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	<p>: Further details on scaling and control technologies are provided in SPERC factsheet. 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.</p> <p>If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.</p> <p>Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.</p> <p>Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.</p> <p>Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file - "Site-Specific Production" worksheet.</p>
Health	<p>: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.</p> <p>Available hazard data do not support the need for a DNEL to be established for other health effects.</p> <p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.</p> <p>Risk management measures are based on qualitative risk characterisation.</p> <p>Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use as a fuel - Industrial

List of use descriptors : **Identified use name:** Use as a fuel - Industrial
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC07

Environmental contributing scenarios : **General exposures** - ERC07

Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16
Bulk closed unloading - PROC08b
Drum/batch transfers - PROC08b
Refuelling - PROC08b
Refuelling aircraft - PROC08b
General exposures (closed systems) - PROC01, PROC02, PROC03
Use as a fuel - PROC16
Equipment cleaning and maintenance - PROC08a
Storage - PROC02

Processes and activities covered by the exposure scenario	: Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 1 500 000 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.89 Maximum daily site tonnage (kg/day): 5 000 000 kg/day Regional use tonnage (tonnes/year): 1 700 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 300 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.005 Release fraction to soil from process (initial release prior to RMM): 0 Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

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Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of ≥ 0 % Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation). Treat air emission to provide a typical removal efficiency of 95 % Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ 94.6 %
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	: Assumed domestic sewage treatment plant flow (m^3/day): 2 000 m^3/day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 5 000 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 95.8 %
Conditions and measures related to external treatment of waste for disposal	: Combustion emissions considered in regional exposure assessment. Combustion emissions limited by required exhaust emission controls. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are

regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: Bulk closed unloading

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 4: Drum/batch transfers

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Refuelling

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Refuelling aircraft

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 7: General exposures (closed systems)

Outdoor

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Handle substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 8: Use as a fuel

Closed systems

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Handle substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 9: Equipment cleaning and maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Ventilation control measures	: Provide adequate ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Organisational measures to prevent/limit releases, dispersion and exposure	: Clear spills immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 10: Storage

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Store substance within a closed system.
Ventilation control measures	: Provide adequate ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
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Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: ESVOC SPERC 7.12a.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 3: Bulk closed unloading

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Drum/batch transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Refuelling

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Refuelling aircraft

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: General exposures (closed systems)

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Use as a fuel

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Equipment cleaning and maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 10: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Further details on scaling and control technologies are provided in SPERC factsheet. 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 air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. 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.
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Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: Not available.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use as a fuel - Professional

List of use descriptors : **Identified use name:** Use as a fuel - Professional
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b

Environmental contributing scenarios : **General exposures** - ERC09a, ERC09b

Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16
General exposures (closed systems) - PROC01, PROC02, PROC03
Bulk closed unloading - PROC08b
Drum/batch transfers - PROC08b
Refuelling - PROC08b
Use as a fuel - PROC16
Equipment maintenance - PROC08a
Storage - PROC02

Processes and activities covered by the exposure scenario	: Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 590 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.0005 Maximum daily site tonnage (kg/day): 1 600 kg/day Regional use tonnage (tonnes/year): 1 200 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 365 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from wide dispersive use (regional only): 0.01 Release fraction to soil from wide dispersive use (regional only): 0.00001 Release fraction to wastewater from wide dispersive use: 0.00001
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

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Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of ≥ 0 % Risk from environmental exposure is driven by freshwater. Treat air emission to provide a typical removal efficiency of: Not applicable. Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ 81.8 %
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	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 7 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 95.8 %
Conditions and measures related to external treatment of waste for disposal	: Combustion emissions considered in regional exposure assessment. Combustion emissions limited by required exhaust emission controls. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

Outdoor

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 4: Bulk closed unloading

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Drum/batch transfers

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Refuelling

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 7: Use as a fuel

Closed systems

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 8: Equipment maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Ventilation control measures	: Provide adequate ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Organisational measures to prevent/limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Clear spills immediately.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Contributing scenario controlling worker exposure for 9: Storage

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Store substance within a closed system.

Ventilation control measures : Provide adequate ventilation. Natural ventilation is from doors, windows etc.
Controlled ventilation means air is supplied or removed by a powered fan.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : ESVOC SPERC 9.12b.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Bulk closed unloading

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Drum/batch transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Refuelling

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Use as a fuel

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Equipment maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Further details on scaling and control technologies are provided in SPERC factsheet. 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 air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. 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.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use as an intermediate
List of use descriptors : **Identified use name:** Use as an intermediate
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC06a
Environmental contributing scenarios : **General exposures - ERC06a**
Health Contributing scenarios : **General measures applicable to all activities - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15**
General exposures (closed systems) - PROC01, PROC02, PROC03
Laboratory activities - PROC15
Bulk transfers - PROC08b
Equipment cleaning and maintenance - PROC08a
Storage - PROC02

Processes and activities covered by the exposure scenario	: Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 15 000 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.0013 Maximum daily site tonnage (kg/day): 50 000 kg/day Regional use tonnage (tonnes/year): 11 000 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 300 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.025 Release fraction to soil from process (initial release prior to RMM): 0.001 Release fraction to wastewater from process (initial release prior to RMM): 0.003
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 57.4 % Risk from environmental exposure is driven by freshwater sediment. Treat air emission to provide a typical removal efficiency of 80 % Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 98.2 %

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Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 50 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 98.2 %
Conditions and measures related to external treatment of waste for disposal	: This substance is consumed during use and no waste from the substance is generated.
Conditions and measures related to external recovery of waste	: This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained batch processes. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations/ national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

With sample collection / Batch process / Continuous process

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Technical conditions and measures at process level (source) to prevent release : Handle substance within a closed system.
Sample via a closed loop or other system to avoid exposure.
Ensure operation is undertaken outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 4: Laboratory activities

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Technical conditions and measures at process level (source) to prevent release : Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Bulk transfers

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure : Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Equipment cleaning and maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Organisational measures to prevent/limit releases, dispersion and exposure	: Clear spills immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 7: Storage

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Ensure operation is undertaken outdoors. Handle substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
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Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: ESVOC SPERC 6.1a.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 4: Laboratory activities

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 5: Bulk transfers

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 6: Equipment cleaning and maintenance

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 7: Storage

Exposure assessment (human):	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
Exposure estimation and reference to its source	: Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Further details on scaling and control technologies are provided in SPERC factsheet. 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 air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. 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.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Manufacture of other substances
List of use descriptors : **Identified use name:** Manufacture of other substances
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Sector of end use: SU03, SU08, SU09, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01
Environmental contributing scenarios : **General exposures - ERC01**
Health Contributing scenarios : **General measures applicable to all activities - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15**
General exposures (closed systems) - PROC01, PROC02, PROC03
Laboratory activities - PROC15
Bulk transfers - PROC08b
Equipment maintenance - PROC08a
Storage - PROC02

Processes and activities covered by the exposure scenario	: Manufacture of other substances: use as process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/ rail car and bulk container).
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 330 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 1 Maximum daily site tonnage (kg/day): 16 000 kg/day Regional use tonnage (tonnes/year): 330
Frequency and duration of use	: Continuous release Emission days (days per year): 20 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.01 Release fraction to soil from process (initial release prior to RMM): 0.0001 Release fraction to wastewater from process (initial release prior to RMM): 0.003
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

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Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 0 % Risk from environmental exposure is driven by freshwater. Treat air emission to provide a typical removal efficiency of 80 % Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 88.1 %
Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 46 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 95.8 %
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.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

With sample collection / Batch process / Continuous process

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Ensure operation is undertaken outdoors.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 4: Laboratory activities

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Bulk transfers

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Ventilation control measures	: Ensure material transfers are under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Equipment maintenance

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Organisational measures to prevent/limit releases, dispersion and exposure	: Clear spills immediately.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 7: Storage

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affecting worker exposure	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)
Technical conditions and measures at process level (source) to prevent release	: Ensure operation is undertaken outdoors. Store substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: Not available.

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Laboratory activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Bulk transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Equipment maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Further details on scaling and control technologies are provided in SPERC factsheet. 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 air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. 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.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Formulation and (re)packing of substances and mixtures

List of use descriptors : **Identified use name:** Formulation and (re)packing of substances and mixtures
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02

Environmental contributing scenarios : **General exposures** - ERC02

Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
General exposures (closed systems) - PROC01, PROC02, PROC03
Process sampling - PROC03
Laboratory activities - PROC15
Bulk transfers - PROC08b
Drum/batch transfers - PROC08b
Equipment cleaning and maintenance - PROC08a
Storage - PROC02

Processes and activities covered by the exposure scenario	: Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 30 000 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.0022 Maximum daily site tonnage (kg/day): 100 000 kg/day Regional use tonnage (tonnes/year): 14 000 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 300 days per year
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 0.025 Release fraction to soil from process (initial release prior to RMM): 0.0001 Release fraction to wastewater from process (initial release prior to RMM): 0.002
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

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Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 68 % Risk from environmental exposure is driven by freshwater sediment. Treat air emission to provide a typical removal efficiency of 0 % Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 98.7 %
Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 100 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 98.7 %
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.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle substance within a closed system. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: General exposures (closed systems)

With sample collection / Outdoor

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented
Personal protection	: Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 4: Process sampling

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Sample via a closed loop or other system to avoid exposure.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Laboratory activities

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.

Technical conditions and measures at process level (source) to prevent release : Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Bulk transfers

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 7: Drum/batch transfers

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 8: Equipment cleaning and maintenance

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Organisational measures to prevent/limit releases, dispersion and exposure : Clear spills immediately.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 9: Storage

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear suitable gloves tested to EN374.

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : ESVOC SPERC 2.2.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: General exposures (closed systems)

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Process sampling

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Laboratory activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Bulk transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Drum/batch transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Equipment cleaning and maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 9: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	<p>: Further details on scaling and control technologies are provided in SPERC factsheet. 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.</p> <p>Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.</p> <p>Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.</p>
Health	<p>: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.</p> <p>Available hazard data do not support the need for a DNEL to be established for other health effects.</p> <p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.</p> <p>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.</p>

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use in coatings - Industrial

List of use descriptors : **Identified use name:** Use in coatings - Industrial
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04

Environmental contributing scenarios : **General exposures** - ERC04

Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15
Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing - PROC02
General exposures (closed systems) - PROC03
Material transfers - PROC08b
Laboratory activities - PROC15
Equipment cleaning and maintenance - PROC08a
Storage - PROC01

Processes and activities covered by the exposure scenario	: Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.
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Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures	
Product characteristics	: Predominantly hydrophobic Substance is complex UVCB.
Amounts used	: Annual site tonnage (tonnes/year): 15 000 tonnes/year Fraction of EU tonnage used in region: 0.1 Fraction of Regional tonnage used locally: 0.072 Maximum daily site tonnage (kg/day): 50 000 kg/day Regional use tonnage (tonnes/year): 210 000 tonnes/year
Frequency and duration of use	: Continuous release Emission days (days per year): 300
Environment factors not influenced by risk management	: Local freshwater dilution factor: 10 Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure	: Release fraction to air from process (initial release prior to RMM): 0.98 Release fraction to soil from process (initial release prior to RMM): 0 Release fraction to wastewater from process (initial release prior to RMM): 0.007
Technical conditions and measures at process level (source) to prevent release	: Common practices vary across sites thus conservative process release estimates used.

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Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: If discharging to domestic sewage treatment plant, additional onsite wastewater treatment required If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 81.7 % Risk from environmental exposure is driven by freshwater sediment. Treat air emission to provide a typical removal efficiency of 90% Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 99.2 %
Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 50 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 99.2 %
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.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems. Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested 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/minimize exposures and to report any skin problems that may develop.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Ventilation control measures	: Provide extract ventilation to points where emissions occur.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 4: General exposures (closed systems)

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.
Technical conditions and measures at process level (source) to prevent release	: Handle substance within a closed system.
Ventilation control measures	: Provide adequate ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Conditions and measures related to personal protection, hygiene and health evaluation	
Advice on general occupational hygiene	: Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 5: Material transfers

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.
Frequency and duration of use/exposure	: 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.

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Laboratory activities

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 7: Equipment cleaning and maintenance

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Organisational measures to prevent/limit releases, dispersion and exposure : Clear spills immediately.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 8: Storage

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : ESVOC SPERC 4.3a.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: General exposures (closed systems)

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Material transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Laboratory activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Equipment cleaning and maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 8: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	<p>: Further details on scaling and control technologies are provided in SPERC factsheet. 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.</p> <p>Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.</p> <p>Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.</p>
Health	<p>: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.</p> <p>Available hazard data do not support the need for a DNEL to be established for other health effects.</p> <p>Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.</p> <p>Risk management measures are based on qualitative risk characterisation.</p> <p>Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: Not available.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use in cleaning agents - Industrial
List of use descriptors : **Identified use name:** Use in cleaning agents - Industrial
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental contributing scenarios : **General exposures**
Health Contributing scenarios : **General measures applicable to all activities** - PROC01, PROC02, PROC03, PROC08a, PROC08b
Bulk transfers - PROC08b
Automated process with (semi) closed systems - PROC02
Filling/preparation of equipment from drums or containers. - PROC03
Equipment cleaning and maintenance - PROC08a
Storage - PROC01

Processes and activities covered by the exposure scenario : Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures

Product characteristics : Predominantly hydrophobic
Substance is complex UVCB.

Amounts used : Annual site tonnage (tonnes/day): 100 tonnes/day
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used locally: 0.00024
Maximum daily site tonnage (kg/day); 5 000 kg/day
Regional use tonnage (tonnes/year): 410 000 tonnes/year

Frequency and duration of use : Continuous release
Emission days (days per year): 20 days per year

Environment factors not influenced by risk management : Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other operational conditions of use affecting environmental exposure : Release fraction to air from process (initial release prior to RMM): 1
Release fraction to soil from process (initial release prior to RMM): 0
Release fraction to wastewater from process (initial release prior to RMM): 0.00003

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : If discharging to municipal sewage treatment plant, no on-site wastewater treatment required.
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 0 %
Risk from environmental exposure is driven by freshwater.
Treat air emission to provide a typical removal efficiency of 70 %
Treat on-site wastewater (prior to receiving water discharge) to provide the required

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	removal efficiency of 82 %
Organisational measures to prevent/limit release from site	: Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater. Sludge should be incinerated, contained or reclaimed.
Conditions and measures related to municipal sewage treatment plant	: Assumed domestic sewage treatment plant flow (m ³ /day): 2 000 m ³ /day Estimated substance removal from wastewater via municipal sewage treatment: 95.8 % Not applicable as there is no release to wastewater. Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 21 000 kg/day Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs: 95.8 %
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.

Contributing scenario controlling worker exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting.

General measures (flammability)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the Dangerous Substances and Explosion Atmospheres Regulations (DSEAR) and The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations (EPS). Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.

Use in contained systems Avoid all possible sources of ignition (spark or flame). Avoid all possible sources of ignition (spark or flame). Avoid all possible sources of ignition (spark or flame). - No smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Refer to relevant technical standards / EU regulations / national regulations. Review SDS for additional advice..

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) 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.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Cleaning manufacturing equipment for maintenance purposes. Exposure (Potential): Only allow access to authorised persons. Ensure operatives are trained to minimise exposures. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Clear up spills immediately and dispose of waste safely. Consider the need for risk based health surveillance.

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 3: Bulk transfers

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 4: Automated process with (semi) closed systems

Use in contained systems

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Handle substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear suitable gloves tested to EN374.

Contributing scenario controlling worker exposure for 5: Filling/preparation of equipment from drums or containers.

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Ventilation control measures : Ensure material transfers are under containment or extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Contributing scenario controlling worker exposure for 6: Equipment cleaning and maintenance

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Organisational measures to prevent/limit releases, dispersion and exposure : Clear spills immediately.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Personal protection : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Contributing scenario controlling worker exposure for 7: Storage

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %.

Frequency and duration of use/exposure : 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.

Technical conditions and measures at process level (source) to prevent release : Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Advice on general occupational hygiene : Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : ESVOC SPERC 4.4a.v1

Exposure estimation and reference to its source - Workers: 2: General measures applicable to all activities

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 3: Bulk transfers

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 4: Automated process with (semi) closed systems

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 5: Filling/preparation of equipment from drums or containers.

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 6: Equipment cleaning and maintenance

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 7: Storage

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Further details on scaling and control technologies are provided in SPERC factsheet. 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 air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Health	: Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. 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.

Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition : UVCB
Code : 1272188
Product name : PC XYLENE FEEDSTOCK (EU)

Section 1 - Title

Short title of the exposure scenario : Use as a fuel - Consumer
List of use descriptors : **Identified use name:** Use as a fuel - Consumer
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b
Market sector by type of chemical product: PC13
Environmental contributing scenarios : **General exposures -** ERC09a, ERC09b
Health Contributing scenarios : **General measures applicable to all activities -** PC13
Liquid: automotive refuelling - PC13
Liquid: Scooter refuelling - PC13
Liquid: garden equipment - use - PC13
Liquid: garden equipment - refuelling - PC13

Processes and activities covered by the exposure scenario : Covers consumer uses in liquid fuels.

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 1: General exposures

Product characteristics : Predominantly hydrophobic
Substance is complex UVCB.
Amounts used : Annual site tonnage (tonnes/year): 4 600 tonnes/year
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used locally: 0.0005
Maximum daily site tonnage (kg/day): 12 000 kg/day
Regional use tonnage (tonnes/year): 9 100 000 tonnes/year
Frequency and duration of use : Continuous release
Emission days (days per year): 365 days per year
Environment factors not influenced by risk management : Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Other operational conditions of use affecting environmental exposure : Release fraction to air from wide dispersive use (regional only): 0.01
Release fraction to soil from wide dispersive use (regional only): 0.00001
Release fraction to wastewater from wide dispersive use: 0.00001
Conditions and measures related to municipal sewage treatment plant : Assumed domestic sewage treatment plant flow: 2 000 m³/day
Estimated substance removal from wastewater via municipal sewage treatment: 95.8 %
Not applicable as there is no release to wastewater.
Maximum allowable site tonnage (MSafe) (kg/d): [Assumed domestic sewage treatment plant flow] (kg/day): 54 000 kg/day
Conditions and measures related to external treatment of waste for disposal : Combustion emissions considered in regional exposure assessment.
Combustion emissions limited by required exhaust emission controls.
External treatment and disposal of waste should comply with applicable local and/or national regulations.

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Conditions and measures related to external recovery of waste : This substance is consumed during use and no waste from the substance is generated.

Contributing scenario controlling consumer exposure for 2: General measures applicable to all activities

General measures (aspiration)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.

Product safety-related measures: Do not ingest. If swallowed then seek immediate medical assistance. Do not induce vomiting. Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage. Keep lamps filled with this liquid out of the reach of children.

General measures (flammability)

Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For flammable substances a selection of the following measures need to be implemented to control unintended ignition of flammable substances. These measures are expected to be suitable to prevent minor accidents which might occur during consumer use. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, it is anticipated that there is no immediate concern as the risk should be controlled to an acceptable level.

Use only with adequate ventilation. Avoid all possible sources of ignition (spark or flame). - No smoking. Review SDS for additional advice..

Product characteristics : Liquid

Frequency and duration of use/exposure : Not applicable.

Other given operational conditions affecting consumers exposure : Not applicable.

Conditions and measures related to personal protection and hygiene

Advice on general occupational hygiene : Not applicable.

Contributing scenario controlling consumer exposure for 3: Liquid: automotive refuelling

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers concentrations up to 1 %

Amounts used : Covers skin contact area up to (cm²): 210 cm²
For each use event, covers use amounts up to (g): 37 500 g
Covers use in room size of (m³): 100 m³

Frequency and duration of use/exposure : Covers use up to: 1 times per day
Covers use up to: 52 days per year
Covers outdoor use.
Covers exposure up to: 0.05 hour(s)

Other given operational conditions affecting consumers exposure : Covers use at ambient temperatures.
Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure

Conditions and measures related to personal protection and hygiene

Advice on general occupational hygiene : Not applicable.

Contributing scenario controlling consumer exposure for 4: Liquid: Scooter refuelling

Product characteristics : Liquid

Concentration of substance in mixture or article : Covers concentrations up to 1 %

Amounts used : Covers skin contact area up to (cm²): 210 cm²
For each use event, covers use amounts up to (g): 3 750 g
Covers use in room size of (m³): 100 m³

Frequency and duration of use/exposure	: Covers use up to: 1 times per day Covers use up to: 52 days per year Covers outdoor use. Covers exposure up to: 0.03 hour(s)
Other given operational conditions affecting consumers exposure	: Covers use at ambient temperatures. Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
Conditions and measures related to personal protection and hygiene	
Advice on general occupational hygiene	: Not applicable.

Contributing scenario controlling consumer exposure for 5: Liquid: garden equipment - use

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers concentrations up to: 1 %
Amounts used	: For each use event, covers use amounts up to (g): 750 g Covers use in room size of (m ³): 100 m ³ Covers skin contact area up to (cm ²): 420 cm ²
Frequency and duration of use/exposure	: Covers use up to: 1 times per day Covers use up to: 26 days per year Covers exposure up to: 2 hour(s) Covers outdoor use.
Other given operational conditions affecting consumers exposure	: Covers use at ambient temperatures. Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
Conditions and measures related to personal protection and hygiene	
Advice on general occupational hygiene	: Not applicable.

Contributing scenario controlling consumer exposure for 6: Liquid: garden equipment - refuelling

Product characteristics	: Liquid
Concentration of substance in mixture or article	: Covers concentrations up to: 1 %
Amounts used	: Covers skin contact area up to (cm ²): 420 cm ² For each use event, covers use amounts up to (g): 750 g Covers use in room size of (m ³): 34 m ³
Frequency and duration of use/exposure	: Covers use up to: 1 times per day Covers use up to: 26 days per year Covers use in a one car garage (34 m ³) under typical ventilation. 1.5 ach (air changes per hour) Covers exposure up to: 0.03 hour(s)
Other given operational conditions affecting consumers exposure	: Covers use at ambient temperatures. Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
Conditions and measures related to personal protection and hygiene	
Advice on general occupational hygiene	: Not applicable.

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: General exposures

Exposure assessment (environment):	: Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	: ESVOC SPERC 9.12c.v1

Exposure estimation and reference to its source - Consumers: 2: General measures applicable to all activities

Exposure assessment (human): : ECETOC TRA, consumer

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Consumers: 3: Liquid: automotive refuelling

Exposure assessment (human): : ECETOC TRA, consumer

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Consumers: 4: Liquid: Scooter refuelling

Exposure assessment (human): : ECETOC TRA, consumer

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Consumers: 5: Liquid: garden equipment - use

Exposure assessment (human): : ECETOC TRA, consumer

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Consumers: 6: Liquid: garden equipment - refuelling

Exposure assessment (human): : ECETOC TRA, consumer

Exposure estimation and reference to its source : Not available.

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Further details on scaling and control technologies are provided in SPERC factsheet. 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.
Health	: Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given 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.

Additional good practice advice beyond the REACH CSA

Environment	: Not available.
Health	: Not available.

XYLENE FEEDSTOCK