



SAFETY DATA SHEET

XYLENE

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

1.1. Product identifier

Product name	XYLENE
Product number	10667
Synonyms; trade names	XYLOL, XYLENE ISOMERS, XYLENE LOW ETHYL BENZENE, MX-THINNER ARCH, MX-THINNER C1301, MX-THINNER C130125, MX-THINNER FUJIFILM, THINNER 21-06, SOLVENT XYLENE, XYLENE STATOIL, XYLENE LOW ETHYL BENZENE, XYLENE LOW EB, XYLENE CEPESA, XYLENE LOW CUMENE
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EU index number	601-022-00-9
EC number	215-535-7

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

Identified uses	Industrial Solvent Lubricant. Polymers Cleaning agent. Chemical Intermediate For further information, see attached Exposure Scenario.
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	10667

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 3 - H226
Health hazards	Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335 STOT RE 2 - H373 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 3 - H412

2.2. Label elements

EC number	215-535-7
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XYLENE

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.
 H312+H332 Harmful in contact with skin or if inhaled.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H304 May be fatal if swallowed and enters airways.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 Avoid breathing vapour/ spray.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

XYLENE, ETHYLBENZENE

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Vapours may form explosive mixtures with air.

SECTION 3: Composition/information on ingredients

3.1. Substances

XYLENE		60-100%
CAS number: 1330-20-7	EC number: 215-535-7	REACH registration number: 01-2119488216-32-XXXX
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335 STOT RE 2 - H373 Asp. Tox. 1 - H304 Aquatic Chronic 3 - H412		

XYLENE

ETHYLBENZENE

10-30%

CAS number: 100-41-4

EC number: 202-849-4

REACH registration number: 01-2119489370-35-XXXX

Acute Toxicity Estimate (oral):

LD₅₀ 3500 mg/kg, Oral, Rat

Acute Toxicity Estimate (dermal):

LD₅₀ > 5000 mg/kg, Dermal, Rabbit

Acute Toxicity Estimate (inhalation):

LC₅₀ 17.2 mg/l, Inhalation, Rat

Classification

Flam. Liq. 2 - H225

Acute Tox. 4 - H332

STOT RE 2 - H373

Asp. Tox. 1 - H304

Aquatic Chronic 3 - H412

The full text for all hazard statements is displayed in Section 16.

Product name XYLENE

REACH registration number 01-2119488216-32-XXXX

EU index number 601-022-00-9

CAS number 1330-20-7

EC number 215-535-7

Ingredient notes This product is a UVCB substance and its composition will be variable, so reported properties may vary or require a range of values to describe them.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move affected person to fresh air at once. Get medical attention.

Ingestion Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Give plenty of water to drink. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist after washing.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation Harmful if inhaled. May cause respiratory irritation. Vapours in high concentrations are anaesthetic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Central nervous system depression.

Ingestion Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. May cause stomach pain or vomiting. Diarrhoea.

Skin contact Skin irritation.

XYLENE

Eye contact Irritation of eyes and mucous membranes.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Vapours may form explosive mixtures with air.

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Follow precautions for safe handling described in this safety data sheet. Take precautionary measures against static discharges. No smoking, sparks, flames or other sources of ignition near spillage. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with inert, damp, non-combustible material. Use only non-sparking tools. Use explosion-proof electrical equipment. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Keep away from heat, sparks and open flame. Eliminate all sources of ignition. Static electricity and formation of sparks must be prevented. Provide adequate ventilation. Avoid inhalation of vapours/spray and contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

XYLENE

Storage precautions	Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from heat, sparks and open flame. Take precautionary measures against static discharges. Avoid contact with acids. Avoid contact with oxidising agents. Suitable container materials: Stainless steel.
Storage class	Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

XYLENE

Sk

Long-term exposure limit (8-hour TWA): WEL 50 ppm 220 mg/m³

Short-term exposure limit (15-minute): WEL 100 ppm 441 mg/m³

ETHYLBENZENE

Long-term exposure limit (8-hour TWA): WEL 100 ppm 441 mg/m³

Short-term exposure limit (15-minute): WEL 125 ppm 552 mg/m³

Sk

Sk = Can be absorbed through the skin.

WEL = Workplace Exposure Limit.

Ingredient comments	WEL = Workplace Exposure Limits
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XYLENE (CAS: 1330-20-7)

Ingredient comments	WEL = Workplace Exposure Limits
DNEL	Workers - Inhalation; Short term systemic effects: 289 mg/m³ Workers - Inhalation; Short term local effects: 289 mg/m³ Workers - Dermal; Long term systemic effects: 180 mg/kg/day Workers - Inhalation; Long term systemic effects: 77 mg/m³ Workers - Inhalation; Long term local effects: 77 mg/m³ General population - Inhalation; Short term systemic effects: 174 mg/m³ General population - Inhalation; Short term local effects: 174 mg/m³ General population - Dermal; Long term systemic effects: 108 mg/kg/day General population - Inhalation; Long term systemic effects: 14.8 mg/m³ General population - Oral; Long term systemic effects: 1.6 mg/kg/day
PNEC	- Fresh water; 0.327 mg/l - marine water; 0.327 mg/l - Intermittent release; 0.327 mg/l - STP; 6.58 mg/l - Sediment (Freshwater); 12.46 mg/kg - Sediment (Marinewater); 12.46 mg/kg - Soil; 2.31 mg/kg

ETHYLBENZENE (CAS: 100-41-4)

XYLENE

DNEL

Workers - Inhalation; Long term systemic effects: 77 mg/m³
 Workers - Inhalation; Short term local effects: 293 mg/m³
 Workers - Dermal; Long term systemic effects: 180 mg/kg/day
 General population - Inhalation; Long term systemic effects: 15 mg/m³
 General population - Oral; Long term systemic effects: 1.6 mg/kg/day

PNEC

- Fresh water; 0.1 mg/l
 - marine water; 0.01 mg/l
 - Intermittent release; 0.1 mg/l
 - STP; 9.6 mg/l
 - Sediment (Freshwater); 13.7 mg/kg
 - Sediment (Marinewater); 1.37 mg/kg
 - Soil; 2.68 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist. Avoid inhalation of vapours.

Eye/face protection

The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 0.5 hours. Nitrile rubber. Protective gloves should have a minimum thickness of 0.45 mm. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Provide eyewash station and safety shower.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Gas filter, type A2. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Aromatic.
Odour threshold	No information available.
pH	No information available.
Melting point	-95 - 13°C
Initial boiling point and range	130 - 152°C @ 760 mm Hg
Flash point	> 23°C

XYLENE

Evaporation rate	15 (diethyl ether = 1)
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 1 % Upper flammable/explosive limit: 7 %
Other flammability	No information available.
Vapour pressure	50 mbar @ °C
Vapour density	3.7
Relative density	No information available.
Bulk density	860 - 880 kg/m ³
Solubility(ies)	0.0146 - 0.0191 g/l water @ 25°C Insoluble in water.
Partition coefficient	log Pow: < 3.2
Auto-ignition temperature	>432°C
Decomposition Temperature	No information available.
Viscosity	< 0.9 m ² /s @ 40°C
Explosive properties	Vapours may form explosive mixtures with air.
Explosive under the influence of a flame	No information available.
Oxidising properties	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

9.2. Other information

Refractive index	No information available.
Particle size	No information available.
Molecular weight	106
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not determined.
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10.4. Conditions to avoid

XYLENE

Conditions to avoid Avoid heat, flames and other sources of ignition. Static electricity and formation of sparks must be prevented.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Hydrocarbons - halogenated. Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,523.0

Species Rat

Acute toxicity - dermal

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

Species Rat

ATE inhalation (vapours mg/l) 12.8

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Target organs Central nervous system Kidneys Liver

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

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Inhalation	Harmful by inhalation. May cause respiratory irritation. Central nervous system depression. May cause nausea, headache, dizziness and intoxication.
Ingestion	May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. May cause nausea, headache, dizziness and intoxication. Diarrhoea.
Skin contact	Harmful in contact with skin. Causes skin irritation.
Eye contact	Causes serious eye irritation.
Target organs	Central nervous system Liver Kidneys

Toxicological information on ingredients.

XYLENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,300.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 4300 mg/kg, Oral, Rat

ATE oral (mg/kg) 4,300.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ 1100 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 11.0

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes. Fully reversible within 7 days.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Local Lymph Node Assay (LLNA) - Mouse: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Chromosome aberration: Negative.

Genotoxicity - in vivo Chromosome aberration: Negative.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

XYLENE

Reproductive toxicity

Reproductive toxicity - fertility Fertility, One-generation study - , Inhalation, Vapour, Rat Negative.

Reproductive toxicity - development Teratogenicity: - : , Vapour, Inhalation, Rat Negative.

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL (90d) 4.35 mg/l, Inhalation, Vapour, Rat

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

Inhalation Harmful by inhalation. Vapours in high concentrations are anaesthetic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Central nervous system depression.

Ingestion May be fatal if swallowed and enters airways. Pneumonia may be the result if vomited material containing solvents reaches the lungs.

Skin contact Harmful in contact with skin. Irritating to skin. Product has a defatting effect on skin. Repeated exposure may cause skin dryness or cracking. May cause allergic contact eczema.

Eye contact Causes serious eye irritation.

ETHYLBENZENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,500.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 3500 mg/kg, Oral, Rat

ATE oral (mg/kg) 3,500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,001.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ > 5000 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 5,001.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 17.2

Species Rat

Notes (inhalation LC₅₀) LC₅₀ (4h) 17.2 mg/l, Inhalation, Vapour, Rat Harmful if inhaled.

XYLENE

ATE inhalation (vapours mg/l) 17.2

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating. Rabbit

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Patch test - Human: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Chromosome aberration: Negative. Gene mutation: Negative.

Genotoxicity - in vivo Gene mutation: Negative.

Carcinogenicity

Carcinogenicity No information available.

IARC carcinogenicity IARC Group 2B Possibly carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - Negative. , Vapour, Inhalation, Rat

Reproductive toxicity - development Developmental toxicity: - Negative.: , Inhalation, Rat

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOAEL 75 ppm, Vapour, Inhalation, Rat May cause damage to organs (hearing organs) through prolonged or repeated exposure.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

Toxicokinetics

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Inhalation Harmful if inhaled.

Ingestion May be fatal if swallowed and enters airways.

Skin contact Liquid may irritate skin.

Eye contact May cause temporary eye irritation.

SECTION 12: Ecological information

XYLENE

Ecotoxicity Harmful to aquatic life with long lasting effects.

Ecological information on ingredients.

XYLENE

Ecotoxicity The product components are not classified as environmentally hazardous.
However, large or frequent spills may have hazardous effects on the environment.

ETHYLBENZENE

Ecotoxicity Harmful to aquatic life with long lasting effects.

12.1. Toxicity

Toxicity Harmful to aquatic life.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 2.6 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 1.0 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: 2.2 mg/l, Algae

Ecological information on ingredients.

XYLENE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 2-11 (Roccus saxatilis); 13,5 (Lepomis macrochirus); 21,0 (Phimepales promelas) mg/l,
LC₅₀, 96 hour: 2.6 mg/l, Oncorhynchus mykiss (Rainbow trout)
OECD 203
Read-across data.
NOEC, 56 day: > 1.3 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 1-5 mg/l, Daphnia magna
EC₅₀, 24 hour: 1 mg/l, Daphnia magna
OECD 202
Read-across data.

Acute toxicity - aquatic plants IC₅₀, 72 hours: 3-5 (Selenastrum sp.) mg/l, Algae
EC₁₀, 72 hour: 1.9 mg/l, Pseudokirchneriella subcapitata
Read-across data.
ErC₅₀, 72 hour: 4.36 mg/l, Pseudokirchneriella subcapitata
Read-across data.

Acute toxicity - microorganisms EC₅₀, 3 hour: >157 mg/l,
OECD 209
Read-across data.

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates EC₁₀, 21 day: 1.91 mg/l, Daphnia magna
OECD 211
Read-across data.

ETHYLBENZENE

Acute aquatic toxicity

XYLENE

Acute toxicity - fish	LC ₅₀ , 96 hour: 4.2 mg/l, Oncorhynchus mykiss (Rainbow trout) OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 1.8 - 2.4 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 5.4 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	EC ₅₀ , 30 minutes: >152 mg/l, Activated sludge
Acute toxicity - terrestrial	LC ₅₀ , 2 day: 0.047 mg/cm ² , Eisenia Fetida (Earthworm)
<u>Chronic aquatic toxicity</u>	
Chronic toxicity - aquatic invertebrates	NOEC, 7 day: 0.96 mg/l, (Ceriodaphnia dubia)

12.2. Persistence and degradability

Persistence and degradability The product is biodegradable.

Ecological information on ingredients.

XYLENE

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 87.8%: 28 day OECD 301F

ETHYLBENZENE

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 70 - 80%: 28 day - Degradation 100%: 6 day OECD 301E

12.3. Bioaccumulative potential

Bioaccumulative potential BCF: 25.9, Bioaccumulation is unlikely.

Partition coefficient log Pow: < 3.2

Ecological information on ingredients.

XYLENE

Bioaccumulative potential	The product is not bioaccumulating. BCF: 5.4 - 25.9, Oncorhynchus mykiss (Rainbow trout)
Partition coefficient	log Pow: 2.77 - 3.2

ETHYLBENZENE

Bioaccumulative potential	BCF: < 100, Fish Read-across data.
Partition coefficient	: 3.5

12.4. Mobility in soil

XYLENE

Mobility The product is insoluble in water.

Ecological information on ingredients.

XYLENE

Mobility The product is immiscible with water and will spread on the water surface.

ETHYLBENZENE

Mobility The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

Ecological information on ingredients.

XYLENE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

ETHYLBENZENE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects Not determined.

Ecological information on ingredients.

XYLENE

Other adverse effects Not determined.

ETHYLBENZENE

Other adverse effects The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty. Materials such as cleaning rags and paper wipes that are contaminated with flammable liquids may self-ignite after use and should be stored in designated fireproof containers with tight-fitting, self-closing lids.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General Wear protective clothing as described in Section 8 of this safety data sheet.

XYLENE

14.1. UN number

UN No. (ADR/RID)	1307
UN No. (IMDG)	1307
UN No. (ICAO)	1307
UN No. (ADN)	1307

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	XYLENES
Proper shipping name (IMDG)	XYLENES
Proper shipping name (ICAO)	XYLENES
Proper shipping name (ADN)	XYLENES

14.3. Transport hazard class(es)

ADR/RID class	3
ADR/RID classification code	F1
ADR/RID label	3
IMDG class	3
ICAO class/division	3
ADN class	3

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-E, S-D
ADR transport category	3
Emergency Action Code	3Y
Hazard Identification Number (ADR/RID)	30
Tunnel restriction code	(D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

XYLENE

Transport in bulk according to Ship type: 2 Cat Y
Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
This product may impact SEVESO storage regulations.

Restrictions (Annex XVII Regulation 1907/2006) This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

Seveso Directive - Control of major accident hazards P5c

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

SECTION 16: Other information

XYLENE

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

30/03/2023

Version number

3.001

Supersedes date

14/02/2022

SDS number

10667

XYLENE

SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H312 Harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H373 May cause damage to organs through prolonged or repeated exposure. H373 May cause damage to organs (Hearing organs) through prolonged or repeated exposure. H412 Harmful to aquatic life with long lasting effects.
Signature	Jitendra Panchal

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



Exposure scenario

Use as an intermediate - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as an intermediate - Industrial
Process scope	Use of substance as an intermediate within closed or contained systems (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC6a Use of intermediate
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SPERC	ESVOC SPERC 6.1a.v1
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Use as an intermediate - Industrial

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 3750 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.003
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.001

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of >80%.
Water Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Waste treatment This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Assumes a good basic standard of occupational hygiene is implemented.

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

Use as an intermediate - Industrial

Technical protective measures Handle substance within a closed system. Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 1 hour.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 23148 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario
Distribution of substance - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Distribution of substance - Industrial
Process scope	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.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC1 Manufacture of the substance ERC7 Use of functional fluid at industrial site
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SPERC	ESVOC SPERC 1.1b.v1
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Worker

Distribution of substance - Industrial

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 200 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.001
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.00001

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m³/day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of >90%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Distribution of substance - Industrial

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures Handle substance within a closed system. Transfer via enclosed lines. Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures

Avoid carrying out activities involving exposure for more than 1 hour.

3. Exposure estimation (Environment 1)

Environmental exposure

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 28100 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Manufacture of substance - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Manufacture of substance - Industrial
Process scope	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC1 Manufacture of the substance ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 1.1.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Manufacture of substance - Industrial

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 150000 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.05
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.0001
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.0001

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 40
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 10000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of >90%.
Water Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Waste treatment During manufacturing no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Assumes a good basic standard of occupational hygiene is implemented.

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

Manufacture of substance - Industrial

Technical protective measures Handle substance within a closed system. Transfer via enclosed lines. Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 1 hour.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 150000 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario
Formulation & (re)packing of substances and mixtures - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Formulation & (re)packing of substances and mixtures - Industrial
Process scope	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.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging
<u>Environment</u>	
Environmental release category	ERC2 Formulation into mixture
SPERC	ESVOC SPERC 2.2.v1
<u>Worker</u>	

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

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 3750 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.025
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.002
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.0001

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m³/day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	No air emission controls required; required removal efficiency is 0%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Waste treatment	During manufacturing no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

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

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Handle substance within a closed system. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance.
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3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 34626 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Coatings - Consumer

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Coatings - Consumer
Process scope	Covers the use in coatings (paints, inks, adhesives, etc.), including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.
Product category	PC1 Adhesives, sealants. PC4 Anti-freeze and de-icing products. PC8 Biocidal products PC9a Coatings and paints, thinners, paint removers. PC9b Fillers, putties, plasters, modelling clay. PC9c Finger paints. PC15 Non-metal-surface treatment products. PC18 Ink and toners. PC23 Leather treatment products PC24 Lubricants, greases and release products. PC31 Polishes and wax blends. PC34 Textile dyes and impregnating products
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.3c.v1

Use in Coatings - Consumer

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual site tonnage: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from wide dispersive use (regional only): 0.985

Emission factor - water Release fraction to wastewater from wide dispersive use: 0.01

Emission factor - soil Release fraction to soil from wide dispersive use (regional only): 0.005

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP type Municipal STP.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

Conditions and measures related to external treatment of waste for disposal

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP

Concentration details Concentration of substance in product: 100% Unless otherwise stated. PC1_1 Glues, hobby use PC1_4 Sealants PC23 Leather treatment products Covers concentrations up to 30 %. PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) PC9a_1 Water-borne latex wall paint PC9b_2 Plasters and floor equalisers PC15 Non-metal-surface treatment products. PC9a_1 Water-borne latex wall paint Covers concentrations up to 0.5 %. PC1_3 Glue from spray PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) PC15 Non-metal-surface treatment products. PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) Covers concentrations up to 5 %. PC4_1 Washing car window PC9b_3 Modelling clay PC9c Finger paints Covers concentrations up to 1 %. PC4_2 Pouring into radiator PC18 Ink and toners. PC31_1 Polishes, wax/cream (floor, furniture, shoes) PC34 Textile dyes and impregnating products Covers concentrations up to 10 %. PC4_3 Lock de-icer PC24_3 Sprays PC31_2 Polishes, spray (furniture, shoes) Covers concentrations up to 50 %. PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC9a_3 Aerosol spray can. PC15 Non-metal-surface treatment products. PC9a_3 Aerosol spray can PC24_2 Pastes Covers concentrations up to 20 %. PC9b_1 Fillers and putty PC15 Non-metal-surface treatment products. PC9a_1 Water-borne latex wall paint Covers concentrations up to 2 %.

Use in Coatings - Consumer

Amounts used

Amount per use: 6900 g

Unless otherwise stated.

PC1_1 Glues, hobby use

Amount per use: 9 g

PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Amount per use: 6390 g

PC1_3 Glue from spray

PC9b_1 Fillers and putty

Amount per use: 85 g

PC1_4 Sealants

PC24_3 Sprays

Amount per use: 75 g

PC4_1 Washing car window

Amount per use: 0.5 g

PC4_2 Pouring into radiator

Amount per use: 2000 g

PC4_3 Lock de-icer

Amount per use: 4 g

PC8_1 Laundry and dish-washing products

Amount per use: 15 g

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Amount per use: 27 g

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

PC24_2 Pastes

PC31_2 Polishes, spray (furniture, shoes)

Amount per use: 35 g

PC9a_1 Water-borne latex wall paint

Amount per use: 2760 g

PC9a_2 Solvent-rich, high-solid, water-borne paint

Amount per use: 744 g

PC9a_3 Aerosol spray can.

Amount per use: 215 g

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).

Amount per use: 491 g

PC9b_3 Modelling clay

Amount per use: 1 g

PC9c Finger paints

Amount per use: 1.35 g

PC23 Leather treatment products

Amount per use: 56 g

PC24_1 Liquids

Amount per use: 2200 g

PC31_1 Polishes, wax/cream (floor, furniture, shoes)

Amount per use: 142 g

PC34 Textile dyes and impregnating products

Amount per use: 115 g

Frequency and duration of use

Use in Coatings - Consumer

Covers exposure up to 6 hours per event.

Unless otherwise stated.

PC1_1 Glues, hobby use

PC1_3 Glue from spray

PC9b_1 Fillers and putty

Covers exposure up to 4 hours per event.

PC1_4 Sealants

PC9b_3 Modelling clay

PC34 Textile dyes and impregnating products

Covers exposure up to 1 hours per event.

PC4_1 Washing car window

Covers exposure up to 0.02 hours per event.

PC4_2 Pouring into radiator

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

PC24_1 Liquids

PC24_3 Sprays

Covers exposure up to 0.17 hours per event.

PC4_3 Lock de-icer

Covers exposure up to 0.25 hours per event.

PC8_1 Laundry and dish-washing products

PC9b_2 Plasters and floor equalisers

Covers exposure up to 0.5 hours per event.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

PC9a_3 Aerosol spray can

PC31_2 Polishes, spray (furniture, shoes)

Covers exposure up to 0.33 hours per event.

PC9a_1 Water-borne latex wall paint

PC9a_2 Solvent-rich, high-solid, water-borne paint

PC18 Ink and toners.

Covers exposure up to 2.2 hours per event.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)

Covers exposure up to 2 hours per event.

PC9c Finger paints.

Covers exposure up to 0.03 hours per event.

PC31_2 Polishes, spray (furniture, shoes)

Covers exposure up to 1.23 hours per event.

Covers frequency up to 365 days/year, , .

Unless otherwise stated.

PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Covers frequency up to 1 days/year, , .

PC1_3 Glue from spray

PC9a_2 Solvent-rich, high-solid, water-borne paint

PC24_3 Sprays

Covers frequency up to 6 days/year, , .

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Covers frequency up to 128 days/year, , .

PC9a_1 Water-borne latex wall paint

PC24_1 Liquids

Covers frequency up to 4 days/year, , .

PC9a_3 Aerosol spray can

PC9b_2 Plasters and floor equalisers

Covers frequency up to 2 days/year, , .

Use in Coatings - Consumer

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)

Covers frequency up to 3 days/year, , .

PC9b_1 Fillers and putty

Covers frequency up to 12 days/year, , .

PC31_1 Polishes, wax/cream (floor, furniture, shoes)

Covers frequency up to 29 days/year, , .

PC31_2 Polishes, spray (furniture, shoes)

Covers frequency up to 8 days/year, , .

PC24_2 Pastes

Covers frequency up to 10 days/year, , .

Covers use up to 1 time/day of use .

Human factors not influenced by risk management

Potentially exposed body parts Covers skin contact area up to 857.5 cm². Unless otherwise stated. PC1 Adhesives, sealants. PC9b_1 Fillers and putty Covers skin contact area up to 35.7 cm². PC4_2 Pouring into radiator PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC23 Leather treatment products PC24_3 Sprays PC31 Polishes and wax blends. Covers skin contact area up to 428 cm². PC4_3 Lock de-icer Covers skin contact area up to 215 cm². PC9b_3 Modelling clay Covers skin contact area up to 255 cm². PC9c Finger paints PC18 Ink and toners. Covers skin contact area up to 71.4 cm². PC24_1 Liquids PC24_2 Pastes Covers skin contact area up to 468 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor/outdoor use.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Room size Covers use in room size of 20 m³. Unless otherwise stated. PC4_1 Washing car window PC4_2 Pouring into radiator PC4_3 Lock de-icer PC9a_3 Aerosol spray can PC24_1 Liquids Covers use in room size of 34 m³.

Ventilation rate Covers use under typical household ventilation. Unless otherwise stated. PC4_1 Washing car window PC4_2 Pouring into radiator PC4_3 Lock de-icer PC9a_3 Aerosol spray can Covers use in a one car garage (34 m³) under typical ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5969 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Use in Coatings - Consumer

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Coatings - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Coatings - Industrial
Process scope	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.
Main sector	SU3 Industrial uses
<u>Environment</u>	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.3a.v1
<u>Worker</u>	

Use in Coatings - Industrial

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	PROC4 Chemical production where opportunity for exposure arises
	PROC5 Mixing or blending in batch processes
	PROC7 Industrial spraying
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	PROC10 Roller application or brushing
	PROC13 Treatment of articles by dipping and pouring.
	PROC15 Use as laboratory reagent.
	PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
	Readily biodegradable.

Amounts used

Annual amount per site: 2500 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.98
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.007
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10
	Local marine water dilution factor: 100

Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

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

Air	Treat air emission to provide a typical removal efficiency of >90%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
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Use in Coatings - Industrial

Waste treatment During manufacturing no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures Handle substance within a closed system. Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance. PROC7 Industrial spraying (automatic/robotic) Carry out in a vented booth provided with laminar airflow.

Risk management measures

PROC7 Industrial spraying
Manual spraying
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 9874 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Use in Coatings - Industrial

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Coatings - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Coatings - Professional
Process scope	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, brush, spreader by hand or similar methods and film formation) and equipment cleaning, maintenance and associated laboratory activities.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.3b.v1
<u>Worker</u>	

Use in Coatings - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. PROC15 Use as laboratory reagent. PROC19 Manual activities involving hand contact PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.98
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.01

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m³/day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 0%.
Water	Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Use in Coatings - Professional

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). , or: Ensure operation is undertaken outdoors. Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Handle substance within a closed system. Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance. Transfer via enclosed lines. PROC11 Non industrial spraying Indoor use. Carry out in a vented booth provided with laminar airflow. PROC15 Use as laboratory reagent. Handle in a fume cupboard or under extract ventilation.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Avoid carrying out activities involving exposure for more than 4 hours. Hand application - fingerpaints, pastels, adhesives Limit the substance content in the product to 5%.
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Risk management measures

Wear gloves to EN374 resistant to the solvent(s) in use.
PROC10 Roller application or brushing
PROC11 Non industrial spraying
Outdoor use.
PROC13 Treatment of articles by dipping and pouring.
Outdoor use.
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5969 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Use in Coatings - Professional

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Cleaning Agents - Consumer

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Cleaning Agents - Consumer
Process scope	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.
Product category	PC3 Air care products. PC4 Anti-freeze and de-icing products. PC8 Biocidal products PC9a Coatings and paints, thinners, paint removers. PC9b Fillers, putties, plasters, modelling clay. PC9c Finger paints. PC24 Lubricants, greases and release products. PC35 Washing and cleaning products PC38 Welding and soldering products, flux products
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.4c.v1

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Use in Cleaning Agents - Consumer

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual site tonnage: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from wide dispersive use (regional only): 0.95

Emission factor - water Release fraction to wastewater from wide dispersive use: 0.025

Emission factor - soil Release fraction to soil from wide dispersive use (regional only): 0.025

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP type Municipal STP.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

Conditions and measures related to external treatment of waste for disposal

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

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP

Concentration details Concentration of substance in product: 50% Unless otherwise stated. PC3_2 Air care, continuous action (solid and liquid) PC4_2 Pouring into radiator Covers concentrations up to 10 %. PC4_1 Washing car window PC9b_3 Modelling clay PC9c Finger paints Covers concentrations up to 1 %. PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) PC9a_3 Aerosol spray can. PC24_3 Sprays Covers concentrations up to 5 %. PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC24_2 Pastes PC38 Welding and soldering products, flux products Covers concentrations up to 20 %. PC9a_1 Water-borne latex wall paint PC9b_2 Plasters and floor equalisers Covers concentrations up to 0.2 %. PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) PC9b_1 Fillers and putty Covers concentrations up to 3 %.

Amounts used

Use in Cleaning Agents - Consumer

Amount per use: 6900 g

Unless otherwise stated.

PC3_1 Air care, instant action (aerosol sprays)

Amount per use: 0.1 g

PC3_2 Air care, continuous action (solid and liquid)

Amount per use: 0.48 g

PC4_1 Washing car window

Amount per use: 0.5 g

PC4_2 Pouring into radiator

Amount per use: 2000 g

PC4_3 Lock de-icer

Amount per use: 4 g

PC8_1 Laundry and dish-washing products

Amount per use: 15 g

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Amount per use: 27 g

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Amount per use: 35 g

PC9a_1 Water-borne latex wall paint

Amount per use: 2760 g

PC9a_2 Solvent-rich, high-solid, water-borne paint

Amount per use: 744 g

PC9a_3 Aerosol spray can.

Amount per use: 215 g

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).

Amount per use: 491 g

PC9b_1 Fillers and putty

Amount per use: 85 g

PC9b_3 Modelling clay

Amount per use: 1 g

PC9c Finger paints

Amount per use: 1.35 g

PC24_1 Liquids

Amount per use: 2200 g

PC24_2 Pastes

Amount per use: 34 g

PC24_3 Sprays

Amount per use: 73 g

PC38 Welding and soldering products, flux products

Amount per use: 12 g

Frequency and duration of use

Use in Cleaning Agents - Consumer

Covers exposure up to 8 hours per event.

Unless otherwise stated.

PC9b_1 Fillers and putty

Covers exposure up to 4 hours per event.

PC9a_1 Water-borne latex wall paint

PC9a_2 Solvent-rich, high-solid, water-borne paint

Covers exposure up to 2.2 hours per event.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)

Covers exposure up to 2 hours per event.

PC9b_2 Plasters and floor equalisers

PC38 Welding and soldering products, flux products

Covers exposure up to 1 hours per event.

Covers exposure up to 0.02 hours per event.

PC8_1 Laundry and dish-washing products

Covers exposure up to 0.5 hours per event.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

PC9a_3 Aerosol spray can

Covers exposure up to 0.33 hours per event.

PC4_3 Lock de-icer

Covers exposure up to 0.25 hours per event.

PC4_2 Pouring into radiator

PC24_1 Liquids

PC24_3 Sprays

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Covers exposure up to 0.17 hours per event.

PC4_1 Washing car window

Covers exposure up to 0.02 hours per event.

Covers frequency up to 365 days/year, , .

Unless otherwise stated.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Covers frequency up to 128 days/year, , .

PC9b_1 Fillers and putty

Covers frequency up to 12 days/year, , .

PC24_2 Pastes

Covers frequency up to 10 days/year, , .

PC9a_2 Solvent-rich, high-solid, water-borne paint

PC24_3 Sprays

Covers frequency up to 6 days/year, , .

PC9a_1 Water-borne latex wall paint

PC9b_2 Plasters and floor equalisers

PC24_1 Liquids

Covers frequency up to 4 days/year, , .

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).

Covers frequency up to 3 days/year, , .

PC9a_3 Aerosol spray can.

Covers frequency up to 2 days/year, , .

Covers use up to 1 times/day of use . Unless otherwise stated. PC3_1 Air care, instant action (aerosol sprays) Covers use up to 4 times/day of use .

Human factors not influenced by risk management

Use in Cleaning Agents - Consumer

Potentially exposed body parts	Covers skin contact area up to 857.5 cm ² . Unless otherwise stated. PC3_2 Air care, continuous action (solid and liquid) PC9b_1 Fillers and putty Covers skin contact area up to 35.7 cm ² . PC4_2 Pouring into radiator PC24_3 Sprays PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint Covers skin contact area up to 428 cm ² . PC4_3 Lock de-icer Covers skin contact area up to 215 cm ² . PC9b_3 Modelling clay PC9c Finger paints Covers skin contact area up to 255 cm ² . PC24_1 Liquids PC24_2 Pastes Covers skin contact area up to 468 cm ² .
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Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	Covers use in room size of 20 m ³ . Unless otherwise stated. PC4 Anti-freeze and de-icing products. PC9a_3 Aerosol spray can PC24_1 Liquids PC24_2 Pastes Covers use in room size of 34 m ³ .
Ventilation rate	Covers use under typical household ventilation. Unless otherwise stated. PC4 Anti-freeze and de-icing products. PC9a_3 Aerosol spray can PC24_1 Liquids PC24_2 Pastes Covers use in a one car garage (34 m ³) under typical ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 2762 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Cleaning Agents - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Cleaning Agents - Industrial
Process scope	Covers the use as a component of cleaning products, including transfer from storage, pouring/unloading from drums or containers and 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.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging
<u>Environment</u>	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.4a.v1
<u>Worker</u>	
Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.

Use in Cleaning Agents - Industrial

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 5000 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 1
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.00003
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of >70%.
Water Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Assumes a good basic standard of occupational hygiene is implemented.

Use in Cleaning Agents - Industrial

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

Technical protective measures Handle substance within a closed system. Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 529101 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Cleaning Agents - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Cleaning Agents - Professional
Process scope	Covers the use as a component of cleaning products, including pouring/unloading from drums or containers and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.4b.v1
<u>Worker</u>	

Use in Cleaning Agents - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	PROC4 Chemical production where opportunity for exposure arises
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	PROC10 Roller application or brushing
	PROC11 Non industrial spraying
	PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.02
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.000001
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m³/day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 0%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Use in Cleaning Agents - Professional

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of controlled ventilation (10 to 15 air changes per hour). , or: Ensure operation is undertaken outdoors.

Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures Provide extract ventilation to points where emissions occur. , or: Ensure operation is undertaken outdoors. Drain or remove substance from equipment prior to break-in or maintenance. Use drum pumps or carefully pour from container.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 1 hour.

Risk management measures

PROC10 Roller application or brushing

PROC11 Non industrial spraying

PROC13 Treatment of articles by dipping and pouring.

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 11809 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario Lubricant - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Lubricant - Industrial
Process scope	Covers the use of formulated lubricants in closed and open systems, including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 4.6a.v1

Worker

Lubricant - Industrial

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	PROC4 Chemical production where opportunity for exposure arises
	PROC7 Industrial spraying
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
	PROC10 Roller application or brushing
	PROC13 Treatment of articles by dipping and pouring.
	PROC17 Lubrication at high energy conditions in metal working operations

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
	Readily biodegradable.

Amounts used

Annual amount per site: 5000 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 1
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.0003
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.001

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10
	Local marine water dilution factor: 100

Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

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

Air	Treat air emission to provide a typical removal efficiency of >70%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation. Use drum pumps or carefully pour from container.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Avoid carrying out activities involving exposure for more than 1 hour.
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3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 230521 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario Lubricant - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Lubricant - Professional
Process scope	Covers the use of formulated lubricants in closed and open systems, including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.6b.v1
<u>Worker</u>	

Lubricant - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. PROC17 Lubrication at high energy conditions in metal working operations PROC18 General greasing/lubrication at high kinetic energy conditions PROC20 Use of functional fluids in small devices
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.01

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m³/day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 0%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Lubricant - Professional

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.

Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation. Transfer via enclosed lines. Use drum pumps or carefully pour from container. Restrict area of openings to equipment. Provide extract ventilation to emission points when contact with warm (> 50°C) lubricant is likely. Drain or remove substance from equipment prior to break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 4 hours. Limit the substance content in the product to 5%.

Risk management measures

Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5969 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Lubricant - Professional

3. Exposure estimation (Health 1)

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario
Use as binders and release agents - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as binders and release agents - Industrial
Process scope	Covers the use as binders and release agents, including material transfers, mixing, application (including spraying and brushing), mould forming and casting and handling of waste.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
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SPERC	ESVOC SPERC 4.10a.v1
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Worker

Use as binders and release agents - Industrial

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC6 Calendering operations. PROC7 Industrial spraying PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 5000 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 1
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.00003
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m³/day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of >80%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Use as binders and release agents - Industrial

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Handle substance within a closed system. Store substance within a closed system. Transfer via enclosed lines. Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. PROC7 Industrial spraying Manual spraying Carry out in a vented booth or extracted enclosure.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Avoid carrying out activities involving exposure for more than 4 hours. Article formation in mould Avoid carrying out operation for more than 1 hour.
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3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 712251 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Use as binders and release agents - Industrial



Exposure scenario

Use as binders and release agents - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as binders and release agents - Professional
Process scope	Covers the use as binders and release agents, including material transfers, mixing, application by spraying, brushing and handling of waste.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.10b.v1
<u>Worker</u>	

Use as binders and release agents - Professional

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	PROC4 Chemical production where opportunity for exposure arises
	PROC6 Calendering operations.
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	PROC10 Roller application or brushing
	PROC11 Non industrial spraying
	PROC14 Tableting, compression, extrusion, pelletisation, granulation

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.95
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.025
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.025

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m ³ /day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 0%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
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Use as binders and release agents - Professional

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures Handle substance within a closed system. Store substance within a closed system. Transfer via enclosed lines. Use drum pumps or carefully pour from container. Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Formulate in enclosed or ventilated mixing vessels. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. PROC11 Non industrial spraying Manual spraying Carry out in a vented booth or extracted enclosure.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 4 hours. Article formation in mould Avoid carrying out operation for more than 1 hour.

Risk management measures

Wear suitable gloves tested to EN374.
PROC10 Roller application or brushing
PROC11 Non industrial spraying
Manual spraying
Casting operations
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 2713 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Use as binders and release agents - Professional

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Agrochemicals - Consumer

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Agrochemicals - Consumer
Process scope	Covers the consumer use in agrochemicals in liquid and solid forms.
Product category	PC12 Lawn and garden preparations (- fertilizers). PC27 Plant protection products.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.11b.v1

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual site tonnage: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Use in Agrochemicals - Consumer

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.9
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.01
Emission factor - soil	Release fraction to soil from wide dispersive use (regional only): 0.09

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP type	Municipal STP.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m ³ /day

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Concentration of substance in product: 4.5% Unless otherwise stated.

Amounts used

For each use event, avoid swallowing amounts more than 0.3 g.

Frequency and duration of use

Covers exposure up to 2 hours per event.
Unless otherwise stated.
Covers frequency up to 365 days/year, , .
Unless otherwise stated.

Covers use up to 1 times/day of use . Unless otherwise stated.

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 857.5 cm ² . Unless otherwise stated.
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Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	Covers use in room size of 20 m ³ . Unless otherwise stated.
Ventilation rate	Covers use under typical household ventilation. Unless otherwise stated.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.
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Use in Agrochemicals - Consumer

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5969 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in Agrochemicals - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Agrochemicals - Professional
Process scope	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging, including equipment clean-downs and disposal.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
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SPERC	ESVOC SPERC 8.11a.v1
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Use in Agrochemicals - Professional

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.9
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.09

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of 0%.
Water Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate Ensure that enough fresh air is supplied to dilute and remove dusts, fumes or vapours.
Between 5 and 15 air changes per hour are recommended, with a through draught. , or:
Ensure operation is undertaken outdoors.
Assumes a good basic standard of occupational hygiene is implemented.

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

Use in Agrochemicals - Professional

Technical protective measures Store substance within a closed system. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance. PROC11 Non industrial spraying Spraying/fogging by machine application Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of > 20.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 1 hour. PROC11 Non industrial spraying Spraying/fogging by manual application Avoid carrying out operation for more than 4 hours. PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. Ad hoc manual application via trigger sprays, dipping, etc. Limit the substance content in the product to 25%.

Risk management measures

Wear gloves to EN374 resistant to the solvent(s) in use.
Spraying/fogging by manual application
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5969 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Functional Fluids - Consumer

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Functional Fluids - Consumer
Process scope	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.
Product category	PC16 Heat transfer fluids. PC17 Hydraulic fluids.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.13c.v1

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual site tonnage: 0.2 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.05
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Functional Fluids - Consumer

Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.025
Emission factor - soil	Release fraction to soil from wide dispersive use (regional only): 0.025

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP type	Municipal STP.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m ³ /day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils.
Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Concentration of substance in product: 50% Unless otherwise stated.

Amounts used

Amount per use: 2200 g
Unless otherwise stated.

Frequency and duration of use

Covers exposure up to 0.17 hours per event.
Unless otherwise stated.
Covers frequency up to 4 days/year, , .
Unless otherwise stated.

Covers use up to 1 times/day of use . Unless otherwise stated.

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 468 cm ² . Unless otherwise stated.
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Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	Covers use in room size of 34 m ³ . Unless otherwise stated.
Ventilation rate	Covers use in a one car garage (34 m ³) under typical ventilation. Unless otherwise stated.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Functional Fluids - Consumer

Environmental exposure

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 225 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Functional Fluids - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Functional Fluids - Industrial
Process scope	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment, including maintenance and related material transfers.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC7 Use of functional fluid at industrial site
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SPERC	ESVOC SPERC 7.13a.v1
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Functional Fluids - Industrial

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 100 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.0003
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.001

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of >80%.
Water Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Do not apply industrial sludge to natural soils.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or:
Ensure operation is undertaken outdoors.
Assumes a good basic standard of occupational hygiene is implemented.

Functional Fluids - Industrial

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

Technical protective measures Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation. Use drum pumps or carefully pour from container. Drain down system prior to equipment break-in or maintenance. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 105820 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Functional Fluids - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Functional Fluids - Professional
Process scope	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment, including maintenance and related material transfers.

Main sector	SU22 Professional uses
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Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
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SPERC	ESVOC SPERC 9.13b.v1
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC20 Use of functional fluids in small devices
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Functional Fluids - Professional

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 0.2 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.05
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.025
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.025

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of >0%.
Water Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Do not apply industrial sludge to natural soils.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or:
Ensure operation is undertaken outdoors.
Assumes a good basic standard of occupational hygiene is implemented.

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

Functional Fluids - Professional

Technical protective measures Provide extract ventilation to points where emissions occur. Use drum pumps or carefully pour from container. Drain down system prior to equipment break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Avoid carrying out activities involving exposure for more than 4 hours.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 225 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Road and construction applications

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Road and construction applications
Process scope	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
<u>Worker</u>	
Process category	PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Road and construction applications

Amounts used

Annual amount per site: 0.2 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.95
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.04

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m ³ /day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of >0%.
Water	Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors. Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Use drum pumps or carefully pour from container. Drain down system prior to equipment break-in or maintenance. Provide extract ventilation to points where emissions occur. , or: Operate activity away from sources of substance emission or release.
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Organisational measures to prevent/limit releases, dispersion and exposure

Road and construction applications

Organisational measures Avoid carrying out activities involving exposure for more than 4 hours.

Risk management measures

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 232 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in laboratories - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in laboratories - Industrial
Process scope	Use of the substance within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging
<u>Environment</u>	
Environmental release category	ERC2 Formulation into mixture ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
<u>Worker</u>	
Process category	PROC10 Roller application or brushing PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 100 tonnes

Frequency and duration of use

Emission days: 300 days/year

Use in laboratories - Industrial

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.025
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.02
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.0001

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m ³ /day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of >0%.
Water	Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils.
Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	No specific risk management measure identified beyond those operational conditions stated.
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3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 3469 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Use in laboratories - Industrial

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Use in laboratories - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in laboratories - Professional
Process scope	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
SPERC	ESVOC SPERC 8.17.v1

Worker

Process category	PROC10 Roller application or brushing PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP Readily biodegradable.
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Amounts used

Annual amount per site: 0.2 tonnes

Frequency and duration of use

Emission days: 300 days/year

Use in laboratories - Professional

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.5
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.5
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8% Assumed domestic sewage treatment plant flow: 2000 m ³ /day
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of >0%.
Water	Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Do not apply industrial sludge to natural soils.
Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Handle in a fume cupboard or under extract ventilation.
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3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 119 kg/day
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Use in laboratories - Professional

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario
Polymer processing - Industrial

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Polymer processing - Industrial
Process scope	Processing of formulated polymers, including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers etc.), moulding, curing and forming activities, material reworks, storage and associated maintenance.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
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SPERC	ESVOC SPERC 4.21a.v1
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Worker

Polymer processing - Industrial

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	PROC4 Chemical production where opportunity for exposure arises
	PROC5 Mixing or blending in batch processes
	PROC6 Calendering operations.
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
	PROC13 Treatment of articles by dipping and pouring.
	PROC14 Tableting, compression, extrusion, pelletisation, granulation
	PROC21 Low energy manipulation and handling of substances bound in/on materials or articles

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
	Readily biodegradable.

Amounts used

Annual amount per site: 5000 tonnes

Frequency and duration of use

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.5
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.00001

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10
	Local marine water dilution factor: 100

Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
	Assumed domestic sewage treatment plant flow: 2000 m ³ /day

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

Air	Treat air emission to provide a typical removal efficiency of >80%.
Water	Prevent discharge of undissolved substance to or recover from onsite waste water. Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.
Soil	Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to external treatment of waste for disposal

Polymer processing - Industrial

Sludge treatment	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details	Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

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

Technical protective measures	Handle substance within a closed system. Store substance within a closed system. Transfer via enclosed lines. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance. PROC6 Calendering operations. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
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3. Exposure estimation (Environment 1)

Environmental exposure	Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented. Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 2047502 kg/day
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure	Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.
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4. Guidance to check compliance with the exposure scenario (Health 1)

Polymer processing - Industrial

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure scenario

Polymer processing - Professional

Identification

Product name	Xylene
REACH registration number	01-2119488216-32-XXXX
CAS number	1330-20-7
EC number	215-535-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Polymer processing - Professional
Process scope	Processing of formulated polymers, including material transfers, moulding and forming activities, material reworks and associated maintenance.
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
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SPERC	ESVOC SPERC 8.21b.v1
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC21 Low energy manipulation and handling of substances bound in/on materials or articles
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Polymer processing - Professional

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Readily biodegradable.

Amounts used

Annual amount per site: 10 tonnes

Frequency and duration of use

Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.98
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.01

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 95.8%
Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Air Treat air emission to provide a typical removal efficiency of >0%.
Water Typical onsite wastewater treatment technology provides removal efficiency of 95.8%.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Do not apply industrial sludge to natural soils.
Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Assumes a good basic standard of occupational hygiene is implemented.

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

Polymer processing - Professional

Technical protective measures Handle substance within a closed system. Transfer via enclosed lines. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Ensure material transfers are under containment or extract ventilation. Drain or remove substance from equipment prior to break-in or maintenance.

3. Exposure estimation (Environment 1)

Environmental exposure Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5969 kg/day

4. Guidance to check compliance with the exposure scenario (Environment 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. 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 onsite technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Exposure Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

4. Guidance to check compliance with the exposure scenario (Health 1)

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.