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

1.1 Product identifier

Trade name : Xylene

Product code : Q5891, Q9151, Q9156, Q9306, T1404, Q9264

Registration number EU : 01-2119488216-32-0001, 01-2119488216-32-0002, 01-

2119488216-32-0003

CAS-No. : 1330-20-7

Other means of identification : Reaction Mass of Ethylbenzene and Xylenes (REACH)

EC-No. : 905-588-0

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

Use of the Sub: Solvent., Raw material for use in the chemical industry.

stance/Mixture Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

Uses advised against : This product must not be used in applications other than the

above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334 3000 CH Rotterdam

Netherlands

Telephone : +31 (0)10 441 5137 / +31 (0)10 441 5191 Telefax : +31 (0)20 716 8316/ +31 (0)20 713 9230

Contact for Safety Data : sccmsds@shell.com

Sheet

1.4 Emergency telephone number

+44 (0) 1235 239 670 (This telephone number is available 24 hours per day, 7 days per

week)

Poison Center Information: +358 9 471 977 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3 H226: Flammable liquid and vapour.

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Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-

ways.

Acute toxicity, Category 4, Dermal H312: Harmful in contact with skin.

Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2 H319: Causes serious eye irritation.

Acute toxicity, Category 4, Inhalation H332: Harmful if inhaled.

Specific target organ toxicity - single exposure, Category 3, Respiratory system

H335: May cause respiratory irritation.

Specific target organ toxicity - repeated exposure, Category 2, Inhalation, Audito-

ry system

H373: May cause damage to organs through pro-

longed or repeated exposure.

Long-term (chronic) aquatic hazard, Cat-

egory 3

H412: Harmful to aquatic life with long lasting ef-

fects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :







Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H226 Flammable liquid and vapour.

HEALTH HAZARDS:

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 (Auditory system) through prolonged or repeated exposure if inhaled.

ENVIRONMENTAL HAZARDS:

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking. P243 Take action to prevent static discharges.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

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P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P331 Do NOT induce vomiting.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

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

May form flammable/explosive vapour-air mixture.

This material is a static accumulator.

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.

If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable airvapour mixtures can occur.

Vapours may cause drowsiness and dizziness.

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

Chemical name	CAS-No.	Concentration (% w/w)
	EC-No.	
Reaction Mass of Ethylben-	Not Assigned	<= 100
zene and Xylenes	905-588-0	

Further information

Contains:

Chemical	Identification number	Classification	Concentration (% w/w)
name			
Xylene	1330-20-7, 215-535- 7	Flam. Liq.3; H226 Asp. Tox.1; H304 Acute Tox.4; H312 Skin Irrit.2; H315 Eye Irrit.2; H319 Acute Tox.4; H332 STOT SE3; H335	> 80

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		STOT RE2; H373 Aquatic Chronic3; H412	
Ethylbenzene	100-41-4, 202-849-4	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 Eye Irrit.2; H319 Acute Tox.4; H332 STOT SE3; H335 STOT RE2; H373 Aquatic Chronic3; H412	< 20

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : DO NOT DELAY.

Keep victim calm. Obtain medical treatment immediately.

Protection of first-aiders : When administering first aid, ensure that you are wearing the

appropriate personal protective equipment according to the

incident, injury and surroundings.

If inhaled : Call emergency number for your location / facility.

Remove to fresh air. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardio-Pulmonary Resuscitation as required and transport to

the nearest medical facility.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with

large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical

facility for additional treatment.

In case of eye contact : Immediately flush eye(s) with plenty of water.

Remove contact lenses, if present and easy to do. Continue

rinsing.

Transport to the nearest medical facility for additional treat-

ment.

If swallowed : Call emergency number for your location / facility.

If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facili-

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ty: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Respiratory irritation signs and symptoms may include a tem-

porary burning sensation of the nose and throat, coughing,

and/or difficulty breathing.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, swelling, and/or blisters.

Eye irritation signs and symptoms may include a burning sen-

sation, redness, swelling, and/or blurred vision.

Ingestion may result in nausea, vomiting and/or diarrhoea. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest

congestion, shortness of breath, and/or fever.

The onset of respiratory symptoms may be delayed for sever-

al hours after exposure.

If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and

death.

Auditory system effects may include temporary hearing loss

and/or ringing in the ears.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!

Call a doctor or poison control center for guidance.

Potential for chemical pneumonitis.

Potential for cardiac sensitisation, particularly in abuse situations. Hypoxia or negative inotropes may enhance these ef-

fects. Consider: oxygen therapy.

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon diox-

ide, sand or earth may be used for small fires only.

Unsuitable extinguishing

media

Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Clear fire area of all non-emergency personnel. Hazardous combustion products may include:

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A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment :

for firefighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained

Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to

relevant Standards (e.g. Europe: EN469).

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

Further information : Keep adjacent containers cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

6.1.1 For non emergency personnel: Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour.
Do not operate electrical equipment.
6.1.2 For emergency responders:

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment.

6.2 Environmental precautions

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all

possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by

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> using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Monitor area with combustible gas indicator.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or

> safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove

contaminated soil and dispose of safely.

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

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures Avoid breathing of or direct contact with material. Only use in

well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see

Section 8 of this Safety Data Sheet.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

Advice on safe handling Avoid inhaling vapour and/or mists.

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

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The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Product Transfer

: Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

Hygiene measures

: Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Further information on storage stability

Storage Temperature: Ambient.

Bulk storage tanks should be diked (bunded).

Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions.

Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment.

Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.

The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.

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Packaging material : Suitable material: For containers, or container linings use mild

steel, stainless steel., For container paints, use epoxy paint,

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or

near containers.

7.3 Specific end use(s)

Specific use(s) : Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices

on Static Electricity).

IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form	Control parameters	Basis
		of exposure)		
Xylene	1330-20-7	HTP-arvot 8h	50 ppm	FI OEL
•			220 mg/m3	
	Further inform	nation: The health ris	k of absorbed amounts of co	mpounds which
			ody cannot be evaluated fro	
			ese compounds have the not	
			irritating or corrosive when in	contact with
	the skin, espe	cially strong acids a	nd bases.	
Xylene		HTP-arvot 15 min	100 ppm	FI OEL
			440 mg/m3	
	Further information: The health risk of absorbed amounts of compounds which			
	can pass through the skin to the body cannot be evaluated from their atmos-			
	pheric concentration. Therefore these compounds have the notification 'skin'in			
	the list. Many compounds can be irritating or corrosive when in contact with			
	the skin, especially strong acids and bases.			
Ethylbenzene	100-41-4	HTP-arvot 15 min	200 ppm	FI OEL
			880 mg/m3	
	Further information: The health risk of absorbed amounts of compounds which			
	can pass through the skin to the body cannot be evaluated from their atmos-			
	pheric concentration. Therefore these compounds have the notification 'skin'in			
	the list. Many compounds can be irritating or corrosive when in contact with			
	the skin, especially strong acids and bases.			
Ethylbenzene		HTP-arvot 8h	50 ppm	FI OEL

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220 mg/m3
Further information: The health risk of absorbed amounts of compounds which can pass through the skin to the body cannot be evaluated from their atmospheric concentration. Therefore these compounds have the notification 'skin'in the list. Many compounds can be irritating or corrosive when in contact with the skin, especially strong acids and bases.

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Xylene	1330-20-7	methyl hippuric acid: 5 Millimoles per liter (Urine)	After shift	FI BAT
Ethylbenzene	100-41-4	mandelic acid: 5.2 Millimoles per liter (Urine)	After the work shift at the end of week or exposure period	FI BAT

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Xylene, 1330-20-7	Workers	Inhalation	Acute systemic effects	293 mg/m3
Xylene, 1330-20-7	Workers	Dermal	Long-term systemic effects	180 mg/kg bw/day
Xylene, 1330-20-7	Workers	Inhalation	Long-term systemic effects	77 mg/m3
Xylene, 1330-20-7	Consumers	Inhalation	Acute systemic ef- fects	180 mg/m3
Xylene, 1330-20-7	Consumers	Dermal	Long-term systemic effects	108 mg/kg bw/day
Xylene, 1330-20-7	Consumers	Inhalation	Long-term systemic effects	15 mg/m3
Xylene, 1330-20-7	Consumers	Oral	Long-term systemic effects	1,6 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name		Environmental Compartment	Value
Remarks:	Exposure assessments have not been presented for the environment		environment
	therefore PNEC values not required.		

8.2 Exposure controls

Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

Use sealed systems as far as possible.

Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

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Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

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

Eye protection : Wear goggles for use against liquids and gas.

Wear full face shield if splashes are likely to occur.

Approved to EU Standard EN166.

Hand protection

Remarks : Where hand contact with the product may occur the use of

gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers.

Contaminated gloves should be replaced.

For continuous contact we recommend gloves with break-through time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm

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depending on the glove make and model.

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

Skin and body protection

Wear chemical resistant gloves/gauntlets and boots. Where

risk of splashing, also wear an apron.

Wear antistatic and flame-retardant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Where air-filtering respirators are suitable, select an appro-

priate combination of mask and filter.

If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type A

boiling point > 65°C (149°F)] meeting EN14387.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : aromatic

Odour Threshold : 0,27 ppm

Melting point/freezing point : < -25 °C

Boiling point/boiling range : Typical 136 - 145 °C

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit

: 7,1 %(V)

Lower explosion limit /

Lower flammability limit

: 1 %(V)

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Flash point : Typical 23 - 27 °C

Method: Abel

Auto-ignition temperature : estimated value(s) 432 - 530 °C

pH : Not applicable

Viscosity

Viscosity, dynamic : ca. 0,9 mPa.s (20 °C)

Method: ASTM D445

Viscosity, kinematic : < 0,9 mm2/s (20 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : estimated value(s) 0,2 g/l

Partition coefficient: n-

octanol/water

: log Pow: 3,16

Method: Literature data.

Vapour pressure : 4,5 kPa (50 °C)

0,8 - 1,2 kPa (20 °C)

0,2 kPa (0 °C)

Relative density : 0,86 - 0,87

Method: ASTM D4052

Density : Typical 870 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 3,7

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : Not classified

Oxidizing properties : Not applicable

Evaporation rate : 13,5

Method: DIN 53170, di-ethyl ether=1

0.76

Method: ASTM D 3539, nBuAc=1

Conductivity: < 100 pS/m

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The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-

conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives

can greatly influence the conductivity of a liquid

Surface tension : Typical 28,7 mN/m, 20 °C, ASTM D-971

Molecular weight : 106 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.

In certain circumstances product can ignite due to static elec-

tricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

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

Information on likely routes of:

exposure

Inhalation is the primary route of exposure although absorption may occur through skin contact or following accidental

ingestion.

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Acute toxicity

Product:

Acute oral toxicity : LD 50 (Rat, male and female): > 2.000 mg/kg

Method: EC Directive 92/69/EEC B.1 Acute Toxicity (Oral) Remarks: Based on available data, the classification criteria

are not met.

Acute inhalation toxicity : LC 50 (Rat, male): 6350 ppm

Exposure time: 4 h
Test atmosphere: vapour

Method: Test(s) equivalent or similar to Directive 67/548/EEC,

Annex V, B.2.

Remarks: Harmful if inhaled.

Acute dermal toxicity : LD 50 (Rabbit, male): > 2.000 mg/kg

Method: Literature data Test substance: m-xylene

Remarks: Based on available data, the classification criteria

are not met.

Information given is based on data obtained from similar sub-

stances.

Skin corrosion/irritation

Product:

Species : Rabbit

Method : Literature data Remarks : Causes skin irritation.

Serious eye damage/eye irritation

Product:

Species : Rabbit

Method : Acceptable non-standard method. Remarks : Causes serious eye irritation.

Respiratory or skin sensitisation

Product:

Species : Mouse

Method : Test(s) equivalent or similar to OECD Test Guideline 429
Remarks : Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Method: Test(s) equivalent or similar to Directive 67/548/EEC,

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Annex V, B.10

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to Directive 67/548/EEC,

Annex V, B.19

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Mouse

Method: OECD Test Guideline 478

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Product:

Species : Rat, male and female

Application Route : Oral

Method : Test(s) equivalent or similar to Directive 67/548/EEC, Annex

V, B.32

Remarks : Based on available data, the classification criteria are not met.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Reaction Mass of Ethylben- zene and Xylenes	No carcinogenicity classification.
Xylene	No carcinogenicity classification.
Ethylbenzene	No carcinogenicity classification.

Material	Other Carcinogenicity Classification	
Xylene	IARC: Group 3: Not classifiable as to its carcinogenicity to humans	
Ethylbenzene	IARC: Group 2B: Possibly carcinogenic to humans	

Reproductive toxicity

Product:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Inhalation

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Method: Acceptable non-standard method.

Remarks: Based on available data, the classification criteria

are not met.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

STOT - single exposure

Product:

Exposure routes : Inhalation
Target Organs : Respiratory Tract

Remarks : High concentrations may cause central nervous system de-

pression resulting in headaches, dizziness and nausea; con-

tinued inhalation may result in unconsciousness.

STOT - repeated exposure

Product:

Exposure routes : Inhalation
Target Organs : Auditory system

Remarks : May cause damage to organs or organ systems through pro-

longed or repeated exposure.

Harmful: danger of serious damage to health by prolonged

exposure through inhalation.

Solvent abuse and noise interaction in the work environment

may cause hearing loss.

Repeated dose toxicity

Product:

Species : Rat, male and female

Application Route : Oral

Method : Test(s) equivalent or similar to OECD Test Guideline 408

Target Organs : No specific target organs noted

Remarks : Over exposures of humans to xylene or xylene solvent mix-

tures produced predominately central nervous system (CNS) effects with less common effects reported to the lung, gastro-

intestinal tract, liver, kidney and heart.

Available animal and human results in auditory system provide limited evidence that xylenes may induce decrements in human hearing, and it was unclear if these changes were

temporary or permanent.

Species : Rat, male
Application Route : Inhalation
Test atmosphere : vapour

Method : Literature data
Target Organs : Auditory system

Remarks : Over exposures of humans to xylene or xylene solvent mix-

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tures produced predominately central nervous system (CNS) effects with less common effects reported to the lung, gastro-

intestinal tract, liver, kidney and heart.

Available animal and human results in auditory system provide limited evidence that xylenes may induce decrements in human hearing, and it was unclear if these changes were

temporary or permanent.

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

11.2 Information on other hazards

Further information

Product:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2,6 mg/l

Exposure time: 96 h

Method: Information given is based on data obtained from

similar substances. Remarks: Toxic

 $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3,82 mg/l

Exposure time: 48 h

Method: Information given is based on data obtained from

similar substances. Remarks: Toxic

LC/EC/IC50 >1 - <=10 mg/l

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): 2,2 mg/l

Exposure time: 72 h

Method: Information given is based on data obtained from

similar substances. Remarks: Toxic

LC/EC/IC50 >1 - <=10 mg/l

Toxicity to fish (Chronic tox-

icity)

NOEC: > 1,3 mg/l Exposure time: 56 d

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Species: Oncorhynchus mykiss (rainbow trout)

Method: Literature data.

Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0,96 mg/l Exposure time: 7 d

Species: Ceriodaphnia dubia (Water flea)

Method: Other guideline method. Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l

Toxicity to microorganisms : EC50 (Activated sludge): > 157 mg/l

Exposure time: 3 h

Method: Information given is based on data obtained from

similar substances.

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

12.2 Persistence and degradability

Product:

Biodegradability : Biodegradation: 87,8 %

Exposure time: 28 d

Method: Information given is based on data obtained from

similar substances.

Remarks: Readily biodegradable.

Remarks: Not Persistent per IMO criteria.

International Oil Pollution Compensation (IOPC) Fund definition: "A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340°C (645°F) and (b) at least 95% of which, by volume, distills at a temperature of 370°C (700°F) when tested by the ASTM Method D-86/78 or any subsequent revision

thereof."

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)

Exposure time: 56 d

Bioconcentration factor (BCF): 29

Method: Literature data.

Remarks: Does not bioaccumulate significantly.

12.4 Mobility in soil

Product:

Mobility : Remarks: Floats on water., If it enters soil, it will adsorb to soil

particles and will not be mobile.

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12.5 Results of PBT and vPvB assessment

Product:

Assessment The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Do not dispose into the environment, in drains or in water

courses

Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

tional requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides tech-

nical aspects at controlling pollutions from ships.

Contaminated packaging Drain container thoroughly.

After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture,

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

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SECTION 14: Transport information

14.1 UN number or ID number

ADR : 1307
RID : 1307
IMDG : 1307
IATA : 1307

14.2 UN proper shipping name

ADR : XYLENES
RID : XYLENES
IMDG : XYLENES

IATA : XYLENES

14.3 Transport hazard class(es)

ADR : 3
RID : 3
IMDG : 3
IATA : 3

14.4 Packing group

ADR

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

RID

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG

Packing group : III Labels : 3

IATA

Packing group : III Labels : 3

14.5 Environmental hazards

ADR

Environmentally hazardous : no

RID

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Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage,

for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

Pollution category : Y Ship type : 2

Product name : Xylene (Mixed Isomers)

Additional Information: This product may be transported under nitrogen blanketing.

Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry. Transport in bulk according to Annex II of Marpol and

the IBC Code

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH),

Article 57).

REACH - List of substances subject to authorisation

(Annex XIV)

: Product is not subject to Authorisa-

tion under REACH.

Other regulations:

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

Product is subject to Government Decree on the Monitoring of the Handling and Storage of Dangerous Chemicals 685/2015, based on Seveso III directive (2012/18/EU).

The components of this product are reported in the following inventories:

AIIC : Listed

DSL : Listed

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IECSC : Listed

ENCS : Listed

KECI : Listed

NZIoC : Listed

PICCS : Listed

TSCA : Listed

TCSI : Listed

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of other abbreviations

FI BAT : Finland. Biological limit values

FI OEL : Finland. HTP Values - Concentrations Known to be Harmful

FI OEL / HTP-arvot 8h : Long term exposure limit FI OEL / HTP-arvot 15 min : Short term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways: ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European

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Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice : Provide adequate information, instruction and training for op-

erators.

Other information : For Industry guidance and tools on REACH please visit the

CEFIC website at http://cefic.org/Industry-support.

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB.

A vertical bar (|) in the left margin indicates an amendment

from the previous version.

This product is classified as H304 (May be fatal if swallowed and enters airways). The risk relates to potential for aspiration. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Section 8 of the SDS. An exposure scenario is not presented.

Sources of key data used to compile the Safety Data Sheet

The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

Classification of the mixture:

Classification procedure:

Flam. Liq. 3	H226	On basis of test data.
Asp. Tox. 1	H304	Expert judgement and weight of evidence determination.
Acute Tox. 4	H312	Expert judgement and weight of evidence determination.
Skin Irrit. 2	H315	Expert judgement and weight of evidence determination.
Eye Irrit. 2	H319	Expert judgement and weight of evidence determination.
Acute Tox. 4	H332	Expert judgement and weight of evidence determination.
STOT SE 3	H335	Expert judgement and weight of evidence determination.
STOT RE 2	H373	Expert judgement and weight of evi-

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dence determination.

Aquatic Chronic 3 H412 Expert judgement and weight of evi-

dence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker

Title : Manufacture of substance- Industrial

Uses - Worker

Title : Use as an intermediate- Industrial

Uses - Worker

Title : Distribution of substance- Industrial

Uses - Worker

Title : Formulation & (re)packing of substances and mixtures- Indus-

trial

Uses - Worker

Title : Uses in Coatings- Industrial

Uses - Worker

Title : Uses in Coatings- Professional

Uses - Worker

Title : Use in Cleaning Agents- Industrial

Uses - Worker

Title : Use in Cleaning Agents- Professional

Uses - Worker

Title : Use in Oil and Gas field drilling and production operations-

Industrial

Uses - Worker

Title : Use as binders and release agents- Industrial

Uses - Worker

Title : Use as binders and release agents- Professional

Uses - Worker

Title : Use in Agrochemicals uses- Professional

Uses - Worker

Title : Use as a fuel- Industrial

Uses - Worker

Title : Use as a fuel- Professional

Uses - Worker

Title : Use in laboratories- Industrial

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Uses - Worker

Title : Use in laboratories- Professional

Uses - Worker

Title : Rubber production and processing- Industrial

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Uses in Coatings

- Consumer

Uses - Consumer

Title : Use in Cleaning Agents

- Consumer

Uses - Consumer

Title : Use in Agrochemicals uses

- Consumer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

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Exposure Scenario - Worker

300000000404	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
Covers daily exposures up to	o 8 hours (unless stated differently).
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)	No other specific measures identified.
General exposures (closed systems) with sample collection General measures (skin irritants).	No other specific measures identified.
General exposures (closed	Provide a good standard of general ventilation (not less than

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systems)Use in contained batch processes	3 to 5 air changes per hour).
General exposures (open systems)Batch processwith sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Process sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Laboratory activities	No other specific measures identified.
Bulk transfers(open systems)with potential for aerosol generation.	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Bulk transfers(closed systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	1,0E+05
Fraction of Regional tonnage	used locally:	0,5
Annual site tonnage (tonnes/	year):	5,0E+04
Maximum daily site tonnage (1,7E+05
Frequency and Duration of Use		
Emission Days (days/year):		300
Environmental factors not influenced by risk management		
Local freshwater dilution factor: 40		40
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
	rocess (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to		1,0E-04
RMM):		
Release fraction to soil from process (initial release prior to RMM):		1,0E-04
Technical conditions and measures at process level (source) to prevent release		prevent release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		charges, air emis-

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sions and releases to soil	
Dialy from any ironmental expenses in driven by wentewater treatment	
Risk from environmental exposure is driven by wastewater treatment	
plant microbes.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	00
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	93,6
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment	plant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,08E+06
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	or disposal
During manufacturing no waste of the substance is generated.	•
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has be indicated.	peen used to estimate workplace exposures unless otherwise	

Section 3.2 -Environment	
Used EUSES model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Measures/Operational Condit Where other Risk Manageme	expected to exceed the DN(M)EL when the Risk Management ions outlined in Section 2 are implemented. In the Measures of the Mea

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Section 4.2 - Environment

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

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

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

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

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Exposure Scenario - Worker

30000000407	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as an intermediate- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 6.1a.v1
Scope of process	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
Covers daily exposures up to	o 8 hours (unless stated differently).
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)	No other specific measures identified.
General exposures (closed systems)with sample collectionGeneral measures (skin irritants).	No other specific measures identified.
General exposures (closed	Provide a good standard of general ventilation (not less than

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systems)Use in contained batch processes	3 to 5 air changes per hour).
General exposures (open systems)Batch processwith sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Process sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Laboratory activities	No other specific measures identified.
Bulk transfers(open systems)with potential for aerosol generation.	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Bulk transfers(closed systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	1,5E+04
Fraction of Regional tonnage	used locally:	0,25
Annual site tonnage (tonnes/	year):	3,75E+03
Maximum daily site tonnage (1,25E+04
Frequency and Duration of Use		
Emission Days (days/year):		300
Environmental factors not influenced by risk management		
Local freshwater dilution factor: 10		
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
	rocess (initial release prior to RMM):	1,0E-03
Release fraction to wastewater from process (initial release prior to		3,0E-03
RMM):		
Release fraction to soil from process (initial release prior to RMM):		1,0E-03
Technical conditions and measures at process level (source) to prevent release		prevent release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		

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sions and releases to soil	
Risk from environmental exposure is driven by soil.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	80
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	93,6
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	lant
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,7E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
This substance is consumed during use and no waste of substance is g	
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	jenerated.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.		

Section 3.2 -Environment
Jsed EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
Measures/Operational Conditions outlined in Section 2 are implemented.		
Where other Risk Management Measures/Operational Conditions are adopted, then users		
should ensure that risks are managed to at least equivalent levels.		

Section 4.2 - Environment

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

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

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

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

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Exposure Scenario - Worker

Exposure Scenario - worker	
300000000405	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9
	Process Categories : PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15
	Environmental Release Categories : ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC 6C,, ERC7, ESVOC
	SpERC 1.1b.v1
Scope of process	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.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)	No other specific measures identified.
General exposures (closed systems) with sample collection General measures (skin irritants).	No other specific measures identified.
General exposures (closed	Provide a good standard of general ventilation (not less than

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systems)Use in contained batch processes	3 to 5 air changes per hour).
General exposures (open systems)Batch processwith sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Process sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Laboratory activities	No other specific measures identified.
Bulk transfers(closed systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Bulk transfers(open systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Drum and small package filling	Fill containers/cans at dedicated filling points supplied with local extract ventilation.
Equipment cleaning and maintenance	Drain down and flush system prior to equipment opening or maintenance.
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		1,0E+05
Fraction of Regional tonnage used locally:		0,002
Annual site tonnage (tonnes/year):		200
Maximum daily site tonnage (kg/day):		6,7E+02
Frequency and Duration of Use		
Emission Days (days/year):		300
Environmental factors not influenced by risk management		
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):		1,0E-03
Release fraction to wastewater from process (initial release prior to		1,0E-05
RMM):		
Release fraction to soil from process (initial release prior to RMM):		1,0E-05
Technical conditions and measures at process level (source) to prevent release		

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O	1
Common practices vary across sites thus conservative process re- lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges air emis-
sions and releases to soil	arges, air eims
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	93,6
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,58E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regiona
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has I indicated.	peen used to estimate workplace exposures unless otherwise

Section 3.2 -Environment	
Used EUSES model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	
Measures/Operational Conditions outlined in Section 2 are implemented.	

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - worke	I
30000000409	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
SECTION 2	OPERATIONAL CONDITIONS AND KISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)	No other specific measures identified.
General exposures (closed systems) with sample collection General measures (skin irritants).	No other specific measures identified.

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General exposures (closed systems)Use in contained batch processes	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
General exposures (open systems)Batch processwith sample collectionwith potential for aerosol generation.	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Batch processes at elevated temperatures	Handle substance within a closed system. Provide extraction ventilation at points where emissions occur.
Process sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Laboratory activities	No other specific measures identified.
Bulk transfers	Ensure material transfers are under containment or extract ventilation.
Mixing operations (open systems) with potential for aerosol generation.	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
ManualTransfer from/pouring from containers	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Drum/batch transfers	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Drum and small package filling	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Equipment cleaning and maintenance	Drain down and flush system prior to equipment opening or maintenance.
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture).	
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	1,5E+04
Fraction of Regional tonnage	used locally:	0,25
Annual site tonnage (tonnes/y	/ear):	3,75E+03

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Maximum daily site tonnage (kg/day):	1,25E+04
Frequency and Duration of Use	<u> </u>
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	2,0E-03
Release fraction to soil from process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to pr	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	.
Risk from environmental exposure is driven by soil.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	6,31
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise	

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indicated.

Section 3.2 - Environment

Used EUSES model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15 Environmental Release Categories: ERC4, ESVOC SpERC 4.3a.v1
Scope of process	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.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

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

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systems)	
General exposures (closed systems)with sample collectionUse in contained systems	No other specific measures identified.
Film formation - force drying, stoving and other technologies.	Handle substance within a closed system. Provide extraction ventilation at points where emissions occur.
Mixing operations (closed systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Film formation - air drying	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Preparation of material for applicationMixing operations (open systems)	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Spraying (automat-ic/robotic)	Carry out in a vented booth provided with laminar airflow.
ManualSpraying	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Material transfers	Ensure material transfers are under containment or extract ventilation.
Roller, spreader, flow application	Provide extraction ventilation at points where emissions occur.
Dipping, immersion and pouring	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Laboratory activities	No other specific measures identified.
Drum/batch transfersTrans- fer from/pouring from con- tainers	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		

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Amounts Used	
Fraction of EU tonnage used in region:	0,1
<u> </u>	5,0E+03
Regional use tonnage (tonnes/year):	1
Fraction of Regional tonnage used locally:	•
Annual site tonnage (tonnes/year):	5,0E+03
Maximum daily site tonnage (kg/day):	1,7E+04
Frequency and Duration of Use	1 000
Emission Days (days/year):	300
Environmental factors not influenced by risk management	1.0
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	1
Release fraction to air from process (initial release prior to RMM):	9,8E-02
Release fraction to wastewater from process (initial release prior to RMM):	7,0E-03
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by soil.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6
the required removal efficiency of >= (%)	,
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
20 not apply made national order of national order	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	6,9E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	I .
External treatment and disposal of waste should comply with applicable	
regulations.	local and/or regional
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

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SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

Used EUSES model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Work	71
30000000412	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	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.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Filling/ preparation of	Ensure material transfers are under containment or extract

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equipment from drums or	ventilation.
containers.	
General exposures (closed systems)Use in contained systems	Ensure material transfers are under containment or extract ventilation.
Preparation of material for applicationIndoor	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Preparation of material for applicationOutdoor	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour.
Material trans- fersDrum/batch transfers	Transfer via enclosed lines. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Roller, spreader, flow applicationIndoor	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Roller, spreader, flow applicationOutdoor	Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better.
ManualSprayingIndoor	Carry out in a vented booth provided with laminar airflow.
ManualSprayingOutdoor	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours Wear a full face respirator conforming to EN140 with Type A filter or better.
Dipping, immersion and pouringIndoor	Provide extraction ventilation at points where emissions occur. Avoid carrying out activities involving exposure for more than 4 hours
Dipping, immersion and pouringOutdoor	Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better.
Laboratory activities	Handle in a fume cupboard or under extract ventilation.
Hand application - finger- paints, pastels, adhe- sivesIndoor	Limit the substance content in the product to 5 %. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Hand application - finger- paints, pastels, adhe-	Limit the substance content in the product to 5 %. Ensure operation is undertaken outdoors.

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sivesOutdoor	Avoid carrying out activities involving exposure for more than 4 hours
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance. Avoid carrying out activities involving exposure for more than 4 hours
Storage.General measures (skin irritants).	Store substance within a closed system. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixtur	е.	
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	5,0E+03
Fraction of Regional tonnage	used locally:	0,002
Annual site tonnage (tonnes/	year):	10
Maximum daily site tonnage	(kg/day):	27,4
Frequency and Duration of	Use	
Emission Days (days/year):		365
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution fa	actor:	100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from p	rocess (initial release prior to RMM):	9,8E-01
Release fraction to wastewat	er from process (initial release prior to	1,0E-02
RMM):		
Release fraction to soil from	process (initial release prior to RMM):	1,0E-02
Technical conditions and n	neasures at process level (source) to pro-	event release
Common practices vary acro	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
	osure is driven by freshwater sediment.	
Prevent discharge of undisso	lived substance to or recover from onsite	
wastewater.		
	wage treatment plant, no secondary	
wastewater treatment require		
Treat air emission to provide a typical removal efficiency of (%)		0
Treat onsite wastewater (prior to receiving water discharge) to provide		93,6
the required removal efficiend		
If discharging to domestic sewage treatment plant, no secondary		0
wastewater treatment require		
	p prevent/limit release from site	
Do not apply industrial sludge	e to natural soils.	
Sludge should be incinerated	l, contained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	4,6E+03	
Assumed domestic sewage treatment plant flow (m3/d)	2.000	

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3 EXPOSURE ESTIMATION	
Section 3.1 - Health	
The ECETOC TRA tool has b	een used to estimate workplace exposures unless otherwise

indicated.

Section 3.2 -Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO
0 4 4 11 14	

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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300000000422	No
30000000422	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13 Environmental Release Categories: ERC4, ESVOC SpERC 4.4a.v1
Scope of process	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	ns affecting Exposure	
	an 20°C above ambient temperature (unles ard of occupational hygiene is implemented	

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Bulk transfers	Ensure material transfers are under containment or extract ventilation.

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1	
Handle substance within a closed system.	
Handle substance within a closed system.	
Provide a good standard of general ventilation (not less than	
3 to 5 air changes per hour).	
Handle substance within a closed system.	
Provide extraction ventilation at points where emissions oc-	
cur.	
Cui.	
Provide extraction ventilation at points where emissions oc-	
cur.	
Provide extraction ventilation at points where emissions oc-	
cur.	
Provide a good standard of general or controlled ventilation (5	
to 15 air changes per hour).	
,	
Minimise exposure by partial enclosure of the operation or	
equipment and provide extract ventilation at openings.	
, or:	
Provide a good standard of general or controlled ventilation (5	
to 15 air changes per hour).	
Avoid carrying out activities involving exposure for more than	
1 hour.	
Provide a good standard of general or controlled ventilation (5	
to 15 air changes per hour).	
Avoid carrying out activities involving exposure for more than	
1 hour.	
Drain down system prior to equipment opening or mainte-	
nance.	
Store substance within a closed system.	
, , , , , , , , , , , , , , , , , , , ,	

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in	region:	0,1
Regional use tonnage (tonnes/y	rear):	5,0E+03
Fraction of Regional tonnage us	sed locally:	1
Annual site tonnage (tonnes/yea	ar):	5,0E+03
Maximum daily site tonnage (kg	/day):	1,7E+04

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Emission Days (days/year):	300
Environmental factors not influenced by risk management	1 ***
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Release fraction to air from process (initial release prior to RMM):	1
Release fraction to wastewater from process (initial release prior to	3,0E-05
RMM):	0,02 00
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	revent release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	narges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by soil.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	70,0
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment բ	olant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	0.45.05
Maximum allowable site tonnage (MSafe) based on release following	3,4E+05
total wastewater treatment removal (kg/d)	0.000
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable regulations.	e local and/or regiona
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	e local and/or regiona

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		
indicated.		

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Section 3.2 - Environment

Used EUSES model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - worker	
30000000423	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1
Scope of process	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).

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures	
General measures (skin irritar	for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits ar face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.	ni- - nd es
Filling/ preparation of equipme from drums or containers.Dedicated facility	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).	l

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Automated process with (semi) closed systems. Use in contained systems	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Automated process with (semi) closed systems.Use in contained systemsDrum/batch transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Filling/ preparation of equipment from drums or containers.Outdoor	Use drum pumps or carefully pour from container.
ManualSurfacesCleaningDipping, immersion and pouring	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Cleaning with low-pressure washersRolling, Brushingno spraying	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Cleaning with high pressure washersSprayingIndoor	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better.
Cleaning with high pressure washersSprayingOutdoor	Limit the substance content in the product to 5 %. Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, Brushing	Provide extraction ventilation at points where emissions occur. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, Brushing	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Cleaning of medical devices	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance. Avoid carrying out activities involving exposure for more than 4 hours
Storage.General measures (skin	Store substance within a closed system.

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irritants).

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

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonne	s/year):	5,0E+03
Fraction of Regional tonnage		2,0E-03
Annual site tonnage (tonnes/	year):	10
Maximum daily site tonnage (27,4
Frequency and Duration of	Use	_
Emission Days (days/year):		365
	influenced by risk management	
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
	rocess (initial release prior to RMM):	2,0E-02
Release fraction to wastewate RMM):	er from process (initial release prior to	1,0E-06
Release fraction to soil from	process (initial release prior to RMM):	0
Technical conditions and m	neasures at process level (source) to pr	event release
Common practices vary acros	ss sites thus conservative process re-	
lease estimates used.		
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
	osure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.		
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.		
Treat air emission to provide	a typical removal efficiency of (%)	0
Treat onsite wastewater (prio	r to receiving water discharge) to provide	93,6
the required removal efficience		
	wage treatment plant, no secondary	0
wastewater treatment require		
	prevent/limit release from site	
Do not apply industrial sludge	e to natural soils.	
Sludge should be incinerated	, contained or reclaimed.	
	elated to municipal sewage treatment p	lant
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93,6
Total efficiency of removal from wastewater after onsite and offsite		93,6
(domestic treatment plant) RMMs (%)		1,1E+04
total wastewater treatment removal (kg/d)		·
Assumed domestic sewage treatment plant flow (m3/d)		2.000

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Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

Used EUSES model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure ocenario - Worker	
30000000438	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Oil and Gas field drilling and production operations-
	Industrial
Use Descriptor	Sector of Use: SU3
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,
	PROC 8a, PROC 8b
	Environmental Release Categories: ERC4
	ŭ
Scope of process	Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment. Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment. Qualitative approach used to conclude safe use.

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Sub-	Covers use of substance/product up to 10	00% (unless stated
stance in Mixture/Article	differently).,	•
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		
Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Bulk transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or:

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	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour.
Filling/ preparation of equipment from drums or containers.	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour.
Drill floor operations	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.
Operation of solids filtering equipment	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour.
Treatment and disposal of filtered solids	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.
Process sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.
General exposures (closed systems)	No other specific measures identified.
Pouring from small containers	Use drum pumps or carefully pour from container.
General exposures (open systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.

Section 2.2	Control of Environmental Exposure	
No exposure assessment presented for the environment.		

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
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indicated.

Section 3.2 - Environment

No exposure assessment presented for the environment.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

No exposure assessment presented for the environment.

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30000000426	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as binders and release agents- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 7, PROC 8b, PROC 10, PROC 13, PROC 14 Environmental Release Categories: ERC4, ESVOC SpERC 4.10a.v1
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		
Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Material transfersGeneral measures (skin irritants).	Ensure material transfers are under containment or extract ventilation.
Material transfersBatch process(closed systems)	Ensure material transfers are under containment or extract ventilation.

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	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Drum/batch transfers	Transfer via enclosed lines. Clear transfer lines prior to de-coupling.
Mixing operations (closed systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Mixing operations (open systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Mold forming	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Casting operations	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
SprayingMachine	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
ManualRolling, Brushing	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
SprayingManual	Carry out in a vented booth or extracted enclosure. Avoid carrying out activities involving exposure for more than 4 hours
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2 Control of Environmental Exposure)	
Substance is isomeric mixture.			
Readily biodegradable.	Readily biodegradable.		
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	5,0E+03	
Fraction of Regional tonnage	used locally:	1	
Annual site tonnage (tonnes/year):		5,0E+03	
Maximum daily site tonnage (kg/day):		1,7E+04	
Frequency and Duration of Use			
Emission Days (days/year):		300	
Environmental factors not influenced by risk management			
Local freshwater dilution factor	or:	10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure		e	
Release fraction to air from process (initial release prior to RMM):		1	
Release fraction to wastewate RMM):	er from process (initial release prior to	3,0E-05	

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Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by soil.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	80
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	4,6E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
Conditions and Measures related to external treatment of waste to	, .
External treatment and disposal of waste should comply with applicable	e local and/or regiona
	e local and/or regiona
External treatment and disposal of waste should comply with applicable	e local and/or regions

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has be indicated.	peen used to estimate workplace exposures unless otherwise

Section 3.2 -Environment	
Used EUSES model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

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Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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30000000432	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as binders and release agents- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 14 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	STP
Concentration of the Sub-	Covers use of substance/product up to 1	00% (unless stated
stance in Mixture/Article	differently).,	
Frequency and Duration of Use		
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
	an 20°C above ambient temperature (unles ard of occupational hygiene is implemented	

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

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(skin irritants).	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Drum/batch transfers	Use drum pumps or carefully pour from container.
Mixing operations (closed systems)	Formulate in enclosed or ventilated mixing vessels. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Mixing operations (open systems)	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Mold forming	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Casting operations(open systems)	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Wear a respirator conforming to EN140 with Type A filter or better.
SprayingManual	Minimise exposure by extracted full enclosure for the operation or equipment. Avoid carrying out activities involving exposure for more than 15 minutes. , or: Wear a respirator conforming to EN140 with Type A filter or better.
ManualRolling, Brushing	Avoid carrying out activities involving exposure for more than 1 hour. Provide extraction ventilation at points where emissions occur. , or: Wear a respirator conforming to EN140 with Type A filter or better.
Storage.	Store substance within a closed system.
Storage.General measures (skin irritants).	Store substance within a closed system. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture	Substance is isomeric mixture.	
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		0,1
Regional use tonnage (tonnes/year): 5,0E+03		5,0E+03
Fraction of Regional tonnage used locally: 2,0E-03		2,0E-03

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Annual site tonnage (tonnes/year):	10	
Maximum daily site tonnage (kg/day):	27,3	
Frequency and Duration of Use		
Emission Days (days/year):	365	
Environmental factors not influenced by risk management		
Local freshwater dilution factor:	10	
Local marine water dilution factor:	100	
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):	9,5E-01	
Release fraction to wastewater from process (initial release prior to	2,5E-02	
RMM):	,	
Release fraction to soil from process (initial release prior to RMM):	2,5E-02	
Technical conditions and measures at process level (source) to pro		
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-	
sions and releases to soil	3 1 , 1 1	
Risk from environmental exposure is driven by soil.		
Prevent discharge of undissolved substance to or recover from onsite		
wastewater.		
If discharging to domestic sewage treatment plant, no secondary		
wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6	
the required removal efficiency of >= (%)	,	
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	2,0E+03	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2.000	
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable	local and/or regional	
regulations.	-	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable	local and/or regional	
regulations.	-	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	

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

Section 3.2 - Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 -Environment

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

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

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

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30000000433	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Agrochemicals uses- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		
Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Transfer from/pouring from containers	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Mixing in containers.	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than

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	1 hour.
Spraying/ fogging by man- ual application	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours Wear a full face respirator conforming to EN140 with Type A filter or better.
Spraying/ fogging by machine application	Limit the substance content in the product to 25 %. Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.
Ad hoc manual application via trigger sprays, dipping, etc.	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Equipment cleaning and maintenanceNon-dedicated facility	Avoid carrying out activities involving exposure for more than 1 hour.
Disposal of wastesNon-dedicated facility	Drain down system prior to equipment opening or maintenance. Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour.
Storage.General measures (skin irritants).	Store substance within a closed system. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		5,0E+03
Fraction of Regional tonnage used locally:		2,0E-03
Annual site tonnage (tonnes/year):		10
Maximum daily site tonnage (kg/day):		27,3
Frequency and Duration of Use		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor	or:	10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):		9,0E-01
Release fraction to wastewater from process (initial release prior to RMM):		1,0E-02
Release fraction to soil from process (initial release prior to RMM):		9,0E-02

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Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	93,6
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	4,6E+03
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
	local and/or regiona
External treatment and disposal of waste should comply with applicable	
	Ç
External treatment and disposal of waste should comply with applicable	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise	
indicated.	

Section 3.2 -Environment	
Used EUSES model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000000436	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC7, ESVOC SpERC 7.12a.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Bulk transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Drum/batch transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
General exposures (closed	No other specific measures identified.

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systems) Use as a fuelGeneral exposures (closed systems)General measures (skin irritants).	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Equipment cleaning and maintenance	Drain down and flush system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage.General measures (skin irritants).	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture).	
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes	s/year):	5,0E+03
Fraction of Regional tonnage	used locally:	1
Annual site tonnage (tonnes/y		5,0E+03
Maximum daily site tonnage (kg/day):	1,7E+04
Frequency and Duration of	Use	
Emission Days (days/year):		300
	nfluenced by risk management	
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
	ocess (initial release prior to RMM):	5,0E-03
Release fraction to wastewate RMM):	er from process (initial release prior to	1,0E-05
	process (initial release prior to RMM):	0
	easures at process level (source) to pro	event release
Common practices vary acros lease estimates used.	ss sites thus conservative process re-	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil		
Risk from environmental expo	sure is driven by freshwater sediment.	
Prevent discharge of undissolution wastewater.	ved substance to or recover from onsite	
If discharging to domestic sev wastewater treatment require	vage treatment plant, no secondary d.	
Treat air emission to provide	a typical removal efficiency of (%)	95
Treat onsite wastewater (prior the required removal efficiency	r to receiving water discharge) to provide	93,6
If discharging to domestic sev wastewater treatment require	vage treatment plant, no secondary d.	0
	prevent/limit release from site	•
Do not apply industrial sludge		
Sludge should be incinerated	contained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3,6E+06	
Assumed domestic sewage treatment plant flow (m3/d)	2.000	

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

	SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health The ECETOC TRA tool has been used to estimate workplace exposures unless other		
		een used to estimate workplace exposures unless otherwise

indicated.

Section 3.2 - Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000000437	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics	Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Bulk transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Drum/batch transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.

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Dipping, immersion and pouring	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Use as a fuelGeneral exposures (closed systems)	No other specific measures identified.
Use as a fuelGeneral exposures (closed systems)General measures (skin irritants).	Avoid carrying out activities involving exposure for more than 4 hours
Equipment cleaning and maintenance	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour.
Storage.	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure		
Substance is isomeric mixture			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne		100	
Fraction of Regional tonnage		2,00E-03	
Annual site tonnage (tonnes/		0,2	
Maximum daily site tonnage (0,55	
Frequency and Duration of	Use		
Emission Days (days/year):		365	
Environmental factors not influenced by risk management			
Local freshwater dilution factor		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from process (initial release prior to RMM):		1,0E-03	
Release fraction to wastewater from process (initial release prior to		1,0E-05	
RMM):			
Release fraction to soil from wide dispersive use (regional only):		1,0E-05	
Technical conditions and measures at process level (source) to prevent release			
	ss sites thus conservative process re-		
lease estimates used.			
sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-	
	seura is drivan by frashwatar sadiment		
Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite			
wastewater.			
	wage treatment plant, no secondary		
wastewater treatment require			
Treat air emission to provide a typical removal efficiency of (%)		0	
Treat onsite wastewater (prior to receiving water discharge) to provide		93,6	

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the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Ol the state the Section of the Control of the Cont		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	0,22	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	10.000	
Conditions and Measures related to external treatment of waste for	r disposal	
External treatment and disposal of waste should comply with applicable	e local and/or regional	
regulations.		
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional		
regulations.		

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		
indicated		

indicated.

Section 3.2 - Environment Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE	
	EXPOSURE SCENARIO	
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
Measures/Operational Conditions outlined in Section 2 are implemented.		
Where other Risk Management Measures/Operational Conditions are adopted, then users		
should ensure that risk	ks are managed to at least equivalent levels.	

Section 4.2 - Environment

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

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

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

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or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet

(http://cefic.org).

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Exposure Scenario - Worker

Exposure oceriario - W	OT INCT
30000000439	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Laboratory activitiessmall scale	No other specific measures identified.
CleaningRolling, BrushingVessel and container cleaning	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	100

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Fraction of Regional tonnage used locally:	1	
Annual site tonnage (tonnes/year):	100	
Maximum daily site tonnage (kg/day):	333	
Frequency and Duration of Use		
Emission Days (days/year):	300	
Environmental factors not influenced by risk management	•	
Local freshwater dilution factor:	10	
Local marine water dilution factor:	100	
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):	2,5E-02	
Release fraction to wastewater from process (initial release prior to	2,0E-02	
RMM):	2,02 02	
Release fraction to soil from wide dispersive use (regional only):	1,0E-04	
Technical conditions and measures at process level (source) to pro		
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discha	arges air emis-	
sions and releases to soil	arges, an enns-	
Risk from environmental exposure is driven by soil.		
Prevent discharge of undissolved substance to or recover from onsite		
wastewater.		
If discharging to domestic sewage treatment plant, no secondary		
wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6	
the required removal efficiency of >= (%)	35,0	
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.	U	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Do not apply industrial sludge to flatural soils.		
Sludge should be incinerated, contained or reclaimed.		
Sidage should be incinerated, contained of reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)	33,0	
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)	33,0	
Maximum allowable site tonnage (MSafe) based on release following	3,0	
total wastewater treatment removal (kg/d)	3,0	
Assumed domestic sewage treatment plant flow (m3/d)	2.000	
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable local and/or regional		
regulations.		
Conditions and managers related to external reservoir of weets		
Conditions and measures related to external recovery of waste	local and/ar region -1	
External recovery and recycling of waste should comply with applicable	iocai and/or regional	
regulations.		

SECTION 3 EXPOSURE ESTIMATION	
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Section 3.1 - Health

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

Section 3.2 - Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000441	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC8a, ESVOC SpERC 8.17.v1
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Laboratory activitiessmall scale	No other specific measures identified.
CleaningRolling, BrushingVessel and container cleaning	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Handle in a fume cupboard or under extract ventilation.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture).	
Readily biodegradable.		
Amounts Used		

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	T
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	100
Fraction of Regional tonnage used locally:	2,0E-03
Annual site tonnage (tonnes/year):	0,2
Maximum daily site tonnage (kg/day):	7,4
Frequency and Duration of Use	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-01
Release fraction to wastewater from process (initial release prior to RMM):	5,0E-01
Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit disch sions and releases to soil	arges, air emis-
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6
the required removal efficiency of >= (%)	00,0
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	<u> </u>
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	0,09
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional

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SECTION 3	EXPOSURE ESTIMATION
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Section 3.1 - Health

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

Section 3.2 - Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Rubber production and processing- Industrial
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 6, PROC 7, PROC 8a, PROC 8b, PROC 13, PROC 14, PROC 15, PROC 21 Environmental Release Categories: ERC1, ERC4,, ESVOC SpERC 4.19.v1
Scope of process	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Sub-	Covers use of substance/product up to 10	00% (unless stated
stance in Mixture/Article	differently).,	•
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unles	s stated differently).
Assumes a good basic stand	lard of occupational hygiene is implemented	d.

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Material transfers(closed systems)General measures (skin irritants).	No other specific measures identified.
Material transfers(open	Provide a good standard of general ventilation (not less than

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systems)Dedicated facility	3 to 5 air changes per hour).
Systems/Dedicated facility	, or:
	Ensure operation is undertaken outdoors.
	Avoid carrying out activities involving exposure for more than 1 hour.
	i nour.
Bulk weighingGeneral	No other specific measures identified.
measures (skin irritants).	·
Small scale weighingDedi-	Ensure material transfers are under containment or extract
cated facility	ventilation.
Additive premixingBatch	Provide extract ventilation to material transfer points and oth-
process(closed systems)	er openings.
· · · · · · · · · · · · · · · · · · ·	
Additive premixing	Provide extraction ventilation at points where emissions oc-
	cur.
Material transfersDedicated	Ensure material transfers are under containment or extract
facility	ventilation.
	Provide a good standard of general or controlled ventilation (5
	to 15 air changes per hour).
Colondoring (including	Destrict area of ananings to aguinment
Calendering (including Banburys)elevated temper-	Restrict area of openings to equipment. Provide extraction ventilation at points where emissions oc-
ature	cur.
Calendering (including	Restrict area of openings to equipment.
Banburys)elevated temperature	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
ature	Avoid carrying out activities involving exposure for more than
	1 hour.
Pressing uncured rubber	Provide a good standard of general or controlled ventilation (5
blanks	to 15 air changes per hour).
Vulcanisationelevated tem-	Restrict area of openings to equipment.
perature	Provide extraction ventilation at points where emissions oc-
	cur.
Capling and a Cala	Describe extraction contilation of calculate languages
Cooling cured articles	Provide extraction ventilation at points where emissions oc- cur.
	Cui.
Laboratory activities	Handle in a fume cupboard or under extract ventilation.
Equipment maintenance	Drain or remove substance from equipment prior to break-in
	or maintenance. Retain drain downs in sealed storage pending disposal or for
	subsequent recycle.
	1

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		

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Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	100
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	100
Maximum daily site tonnage (kg/day):	333
Frequency and Duration of Use	000
Emission Days (days/year):	300
Environmental factors not influenced by risk management	300
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
	100
Other Operational Conditions affecting Environmental Exposure	1.05.00
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to	3,0E-03
RMM):	4.05.04
Release fraction to soil from wide dispersive use (regional only):	1,0E-04
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	l
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	T
Risk from environmental exposure is driven by soil.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	93,6
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	17
total wastewater treatment removal (kg/d)	
	2.000
Assumed domestic sewage treatment plant flow (m3/d)	
Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for	r disposal
Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for This substance is consumed during use and no waste of substance is g	
Conditions and Measures related to external treatment of waste for	
Conditions and Measures related to external treatment of waste for	

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SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

30000001039	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3c.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 °	%
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	mount up to (g):	6.900
covers skin contact area (cn	n2):	857,5
Frequency and Duration o	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Covers use up to (hours/event): 6		6
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise. Covers use at ambient temp Covers use in room size of 2 Covers use under typical ho	20m3	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 9 g

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	Covers use in room size of 20 m2
	Covers use in room size of 20 m3
A II	Covers exposure up to 4 hours/event
Adhesives, sealants Glues DIY-use (carpet glue, tile glue, wood parquet glue).	Covers concentrations up to 0,2 %
g.a.s,osa paquet g.a.s).	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,70 cm2
	For each use event, covers amount up to 6.390 g
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 5 %
from spray.	'
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85,05 g
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 25 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 75 g
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event
Anti-Freeze and de-icing products Washing car window.	Covers concentrations up to 1 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 0,5 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
A.C.F.	Covers exposure up to 0,02 hours/event
Anti-Freeze and de-icing products Pouring into radiator.	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 2.000 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Anti-Freeze and do ising	Covers concentrations up to 50 %
Anti-Freeze and de-icing products Lock de-icer.	·
	covers use up to 365 day/year

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	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,50 hours/event
Biocidal products (e.g. Dis-	Covers concentrations up to 5 %
infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	
	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 15 %
-	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event Covers concentrations up to 0,5 %
Coatings and paints, thin- ners, paint removers Wa- terborne latex wall paint.	Covere consoninations up to 6,6 %
ners, paint removers Wa-	
ners, paint removers Wa-	covers use up to 4 day/year
ners, paint removers Wa-	covers use up to 4 day/year covers use up to 1 times/day of use
ners, paint removers Wa-	covers use up to 4 day/year

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	Covers exposure up to 2,20 hours/event	
Coatings and paints, thin-	Covers concentrations up to 2%	
ners, paint removers Sol-	Covers concentrations up to 2 %	
vent rich, high solid, water		
borne paint.		
	covers use up to 6 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428,75 cm2	
	For each use event, covers amount up to 744 g	
	Covers use in room size of 20 m3	
	Covers exposure up to 2,20 hours/event	
Coatings and paints, thin-	Covers concentrations up to 21 %	
ners, paint removers Aero-	Covere concentrations up to 21 //	
sol spray can.		
on opray cam	covers use up to 2 day/year	
	covers use up to 1 times/day of use	
	For each use event, covers amount up to 215 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,33 hours/event	
Coatings and paints, thin-	Covers concentrations up to 3 %	
ners, paint removers Re-		
movers (paint-, glue-, wall		
paper-, sealant-remover).		
,	covers use up to 3 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857,50 cm2	
	For each use event, covers amount up to 491 g	
	Covers use in room size of 20 m3	
	Covers exposure up to 2,00 hours/event	
Fillers, Putties Fillers and	Covers concentrations up to 2 %	
putty.	'	
•	covers use up to 12 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,73 cm2	
	For each use event, covers amount up to 85 g	
	Covers use in room size of 20 m3	
	Covers exposure up to 4,00 hours/event	
Fillers, Putties Plasters and	Covers concentrations up to 0,3 %	
floor equalizers.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
·	covers use up to 2 day/year	
	Covers use in room size of 20 m3	
Fillers. Putties Modelling		
	70	
•	covers use up to 365 day/year	
Fillers, Putties Modelling clay.	covers use up to 1 times/day of use covers skin contact area up to (cm2): 857,50 cm2 For each use event, covers amount up to 6.900 g	

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	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1 g
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event
Finger paints	Covers concentrations up to 1 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1,35 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,03 hours/event
Non-metal-surface treat-	Covers concentrations up to 0,5 %
ment products Waterborne latex wall paint.	
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Non-metal-surface treat-	Covers concentrations up to 2,2 %
ment products Solvent rich, high solid, water borne paint.	
panti	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Non-metal-surface treat- ment products Aerosol spray can.	Covers concentrations up to 21 %
	covers use up to 2 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,33 hours/event
Non-metal-surface treat- ment products Removers	Covers concentrations up to 3,4 %
(paint-, glue-, wall paper-, sealant-remover).	
•	covers use up to 3 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use in room size of 20 m3
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	Covers exposure up to 2,00 hours/event

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	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 71,40 cm2
	For each use event, covers amount up to 40 g
	Covers use in room size of 20 m3
Lasthantanning due finish	Covers exposure up to 2,20 hours/event
Leather tanning, dye, finishing, impregnation and care products Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 25 %
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Leather tanning, dye, finishing, impregnation and care products Polishes, spray (furniture, shoes).	Covers concentrations up to 33 %
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 15 %
	covers use up to 10 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
	Covers use in room size of 20 m3
Lubricants, greases, release products Sprays.	Covers concentrations up to 45 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use in room size of 20 m3

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	Covers exposure up to 0,17 hours/event
Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 10 %
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 142 g
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Polishes and wax blends Polishes, spray (furniture, shoes).	Covers concentrations up to 48 %
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 35 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Textile dyes, finishing and impregnating products; including bleaches and other processing aids	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 115 g
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event

Section 2.2	Section 2.2 Control of Environmental Exposure		
Substance is isomeric mixture.			
Readily biodegradable.	Readily biodegradable.		
Amounts Used	Amounts Used		
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonnes	s/year):	5,0E+03	
Fraction of Regional tonnage	used locally:	0,002	
Annual site tonnage (tonnes/y	/ear):	10	
Maximum daily site tonnage (27,4	
Frequency and Duration of	Use		
Emission Days (days/year): 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor: 10		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from wide dispersive use (regional only):		9,85E-01	
Release fraction to wastewater from wide dispersive use:		1,0E-02	
Release fraction to soil from wide dispersive use (regional only):		5,0E-03	
Conditions and Measures related to municipal sewage treatment plant			
Estimated substance removal treatment (%)	from wastewater via domestic sewage	93,6	

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Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following	4,6E+03
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.		

Section 3.2 - Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

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SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Cleaning Agents - Consumer	
Use Descriptor	Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1	
Scope of process	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.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT	
	MEASURES	

Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 50 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6.900
covers skin contact area (cm2):		857,5
Frequency and Duration o	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		4
Covers use up to (hours/event): 8		8
Other Operational Conditions affecting Exposure		
Unless stated otherwise. Covers use at ambient temp Covers use in room size of 2 Covers use under typical ho	20m3	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Air care products Air care, instant action (aerosol sprays).	Covers concentrations up to 50 %	
	covers use up to 365 day/year	
	covers use up to 4 times/day of use	
	for each use event, covers amount up to (g): 0,1 g	

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	Covers use in room size of 20 m3
	Covers exposure up to 0,25 hours/event
Air care products Air care,	Covers concentrations up to 10 %
continuous action (solid and liquid).	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,70 cm2
	For each use event, covers amount up to 0,48 g
	Covers use in room size of 20 m3
	Covers exposure up to 8,00 hours/event
Anti-Freeze and de-icing products Washing car window.	Covers concentrations up to 1 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 0,5 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,02 hours/event
Anti-Freeze and de-icing products Pouring into radiator.	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 2.000 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Anti-Freeze and de-icing products Lock de-icer.	Covers concentrations up to 50 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
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	For each use event, covers amount up to 15 g

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	Covers average up to 0.50 hours/sugart	
Discisso mentiones (c. 5)	Covers exposure up to 0,50 hours/event	
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners,	Covers concentrations up to 5 %	
liquids (all purpose clean-		
ers, sanitary products, floor		
cleaners, glass cleaners,		
carpet cleaners, metal		
cleaners).		
,	covers use up to 128 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857,50 cm2	
	For each use event, covers amount up to 27 g	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,33 hours/event	
Biocidal products (e.g. Dis-	Covers concentrations up to 17 %	
infectants, pest control)		
(excipient only). Cleaners,		
trigger sprays (all purpose		
cleaners, sanitary products,		
glass cleaners).	covers use up to 128 day/year	
	covers use up to 120 day/year	
	covers skin contact area up to (cm2): 428,00 cm2	
	For each use event, covers amount up to 35 g	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,17 hours/event	
Coatings and paints, thin-	Covers concentrations up to 3 %	
ners, paint removers Re-	'	
movers (paint-, glue-, wall		
paper-, sealant-remover).		
	covers use up to 3 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857,50 cm2	
	For each use event, covers amount up to 491 g	
	Covers use in room size of 20 m3	
	Covers exposure up to 2,00 hours/event	
Lubricants, greases, release products Liquids.	Covers concentrations up to 50 %	
	covers use up to 4 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 2.200 g	
	Covers use in a one car garage (34 m3) under typical ventilation.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,17 hours/event	
Lubricants, greases, re-	Covers concentrations up to 20 %	
lease products Pastes.		
lease products Pastes.	covers use up to 10 day/year covers use up to 1 times/day of use	

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	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
Lubricants, greases, release products Sprays.	Covers concentrations up to 5 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Washing and cleaning products (including solvent based products) Laundry	Covers concentrations up to 5 %
and dish washing products.	
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,50 hours/event
Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %
	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Washing and cleaning products (including solvent based products) Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 17 %
,	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Welding and soldering	Covers concentrations up to 20 %
products (with flux coatings	25.5.5 55.65.65.65.65.65.65.65.65.65.65.65.65.6

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or flux cores.), flux products	
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 12 g
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	5,0E+03
Fraction of Regional tonnage	used locally:	2,0E-03
Annual site tonnage (tonnes/	year):	10
Maximum daily site tonnage		27,3
Frequency and Duration of		
Emission Days (days/year):		365
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution factor:		100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from w	vide dispersive use (regional only):	9,5E-01
Release fraction to wastewat	er from wide dispersive use:	2,5E-02
Release fraction to soil from wide dispersive use (regional only):		2,5E-02
Conditions and Measures r	elated to municipal sewage treatment p	olant
Estimated substance remova	Il from wastewater via domestic sewage	93,6
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite		93,6
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following		2,0E+03
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		2.000
Conditions and Massuras r	elated to external treatment of waste fo	r dienosal

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise		
indicated.		

Section 3.2 -Environm	nent	
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Used EUSES model.

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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE	
	EXPOSURE SCENARIO	

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Agrochemicals uses - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: , PC27 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1
Scope of process	Covers the consumer use in agrochemicals in liquid and solid forms.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT	
	MEASURES	

Control of Consumer Exposure	
Liquid, vapour pressure > 10 Pa	
Unless stated otherwise.	
Covers concentration up to (%): 4,5 %	
for each use event, covers amount up to (g):	
kin contact area (cm2): 857,5	
Use	
covers use up to (times/day of use):	
Covers use up to (hours/event): 2	
ns affecting Exposure	
Covers use in room size of 20m3	
	Liquid, vapour pressure > 10 Pa Unless stated otherwise. Covers concentration up to (%): 4,5 % mount up to (g): 2): Use of use): nt): ns affecting Exposure eratures.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Fertilizers Lawn and garden preparations.	Covers concentrations up to 4,5 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, assumes swallowed amount of 0,3 g
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Plant protection products	Covers concentrations up to 4,5 %

Covers use under typical household ventilation.

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covers use up to 365 day/year
covers use up to 1 times/day of use
covers skin contact area up to (cm2): 857,50 cm2
For each use event, assumes swallowed amount of 0,3 g
Covers use in room size of 20 m3
Covers exposure up to 2,00 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixtur	e.	
Readily biodegradable.		
Amounts Used		·
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		5,0E+03
Fraction of Regional tonnage used locally:		2,0E-03
Annual site tonnage (tonnes/year):		10
Maximum daily site tonnage (kg/day):		27,3
Frequency and Duration of		
Emission Days (days/year):		365
	influenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Condition	ons affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):		9,0E-01
Release fraction to wastewater from wide dispersive use:		1,0E-02
Release fraction to soil from wide dispersive use (regional only):		9,0E-02
Conditions and Measures	related to municipal sewage treatment p	olant
Estimated substance removal from wastewater via domestic sewage		93,6
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite		93,6
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following		4,6E+03
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		2.000
Conditions and Massures	colated to external treatment of waste for	r dienosal

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise		
indicated.		

Section 3.2 -Environmen	t
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Used EUSES model.

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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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