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

#### 1.1 Product identifier

Trade name : ShellSol A100 Low Cumene

Product code : Q7591

Registration number EU : 01-2119455851-35-0000 Synonyms : Hydrocarbons, C9, aromatics

EC-No. : 918-668-5

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

Use of the Sub- : Industrial Solvent.

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

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

Poison Centers (CAV) eligible for access to information for health emergency response: CAV Osp. Bambin Gesù Roma 06 68593726; CAV Policlinico "Umberto I" Roma 06-49978000:

CAV Policlinico "A. Gemelli" Roma 06 3054343; CAV Milano 02 66101029; CAV Bergamo 800883300:

CAV Pavia 0382 24444; CAV Verona 800011858; CAV Firenze 055 7947819; CAV Napoli 081 5453333:

CAV Foggia 800183459.

Other information : SHELLSOL is a trademark owned by Shell Trademark Man-

agement B.V. and Shell Brands Inc. and used by affiliates of

Shell plc.

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#### **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.

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

ways.

Specific target organ toxicity - single ex-

posure, Category 3, Respiratory Tract

H335: May cause respiratory irritation.

Specific target organ toxicity - single ex-

posure, Category 3, Narcotic effects

H336: May cause drowsiness or dizziness.

Long-term (chronic) aquatic hazard, Cat-

egory 2

H411: Toxic to aquatic life with long lasting effects.

#### 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.

H335 May cause respiratory irritation.H336 May cause drowsiness or dizziness.

**ENVIRONMENTAL HAZARDS:** 

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066 cracking.

Repeated exposure may cause skin dryness or

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.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

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P331 Do NOT induce vomiting.

Storage:

No precautionary phrases.

Disposal:

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

#### 2.3 Other hazards

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

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

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.

Possibility of organ or organ system damage from prolonged exposure; see Section 11 for details. Target organ(s):

Auditory system

## **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
	EC-No.	
Hydrocarbons, C9, aromat-	Not Assigned	<= 100
ics	918-668-5	

#### **Further information**

#### Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Cumene	98-82-8, 202-704-5	Flam. Liq.3; H226 Asp. Tox.1; H304 STOT SE3; H335 Carc.1B; H350 Aquatic Chronic2; H411	>= 0 - <= 0,099
Benzene	71-43-2, 200-753-7	Flam. Liq.2; H225 Asp. Tox.1; H304	>= 0 - < 0,1

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#### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal

conditions.

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 : Remove to fresh air. If rapid recovery does not occur,

transport to nearest medical facility for additional treatment.

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 : Flush eye with copious quantities of water.

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

rinsing.

If persistent irritation occurs, obtain medical attention.

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 facility: 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.

Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination.

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Continued inhalation may result in unconsciousness and death.

Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.

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.

Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.

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 : Call a doctor or poison control center for guidance.

Potential for chemical pneumonitis.

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:

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.

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## 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 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 bond-

ing and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

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#### 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

material.

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.

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 han-

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dling 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 ( $\leq 1$  m/s until fill pipe submerged to twice its diameter, then  $\leq 7$  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 cov-

ering the packaging and storage of this product.

Further information on stor-

age 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 flamma-

ble.

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.

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## 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 of exposure)	Control parameters	Basis
Cumene	98-82-8	STEL	50 ppm	IT OEL
	Countly and in factor	ation. The metation	250 mg/m3	
			Skin' attributes to the exposusorption through the skin.	ire iimit values
Cumene		TWA	10 ppm	IT OEL
			50 mg/m3	
	Further inform	nation: The notation	Skin' attributes to the exposu	ıre limit values
	and indicates	the possibility of abs	sorption through the skin.	
Cumene		TWA	10 ppm	2019/1831/E
			50 mg/m3	U
		Further information: A skin notation assigned to the occupational exposure		
		limit value indicates the possibility of significant uptake through the skin., In-		
	dicative		·	
Cumene		STEL	50 ppm	2019/1831/E
			250 mg/m3	U
	Further information: A skin notation assigned to the occupational exposure			
	limit value indicates the possibility of significant uptake through the skin., In-			the skin., In-
_	dicative	T	T	T =
Benzene	71-43-2	TWA	0,25 ppm	Shell Internal
			0,8 mg/m3	Standard
				(SIS) for 8-12
				hour TWA.
Benzene		STEL	2,5 ppm	Shell Internal
			8 mg/m3	Standard
				(SIS) for 15
				min (STEL)

#### **Biological occupational exposure limits**

No biological limit allocated.

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

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Substance name	End Use	Exposure routes	Potential health effects	Value
ShellSol A100	Workers	Dermal	Long-term systemic effects	25 mg/kg bw/day
ShellSol A100	Workers	Inhalation	Long-term systemic effects	150 mg/m3
ShellSol A100	Consumers	Inhalation	Long-term systemic effects	32 mg/m3
ShellSol A100	Consumers	Dermal	Long-term systemic effects	11 mg/kg
ShellSol A100	Consumers	Oral	Long-term systemic effects	11 mg/kg

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

Substance name		Environmental Compartment	Value
Remarks:	tion. Conv	e is a hydrocarbon with a complex, unknown or rentional methods of deriving PNECs are not a ple to identify a single representative PNEC for	ppropriate and it is

#### 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.

Eye washes and showers for emergency use.

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

#### 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.

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

Eye protection : If material is handled such that it could be splashed into eyes,

protective eyewear is recommended. 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: butyl-

rubber Nitrile rubber gloves. Incidental contact/Splash protection: Nitrile rubber gloves. For continuous contact we recommend gloves with breakthrough 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 depending on the glove make and model. 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. 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

izer is recommended.

Skin and body protection : Skin protection is not required under normal conditions of

For prolonged or repeated exposures use impervious clothing

and dried thoroughly. Application of a non-perfumed moistur-

over parts of the body subject to exposure.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

Wear antistatic and flame-retardant clothing, if a local risk assessment deems it so.

Respiratory protection : If engineering controls do not maintain airborne concentra-

tions to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the spe-

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cific 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 : Data not available

Melting point/freezing point : Data not available

Boiling point/boiling range : 150 - 185 °C

Flammability

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Flammable liquid and vapour.

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit

it

Lower explosion limit / Lower flammability limit

0,6 %(V)

7 %(V)

Flash point : 38 - 50 °C

Method: IP 170

Auto-ignition temperature : 507 °C

Decomposition temperature

Decomposition tempera-

: Data not available

ture

pH : Data not available

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Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : Typical 0,9 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

log Pow: 3,7 - 4,5

Vapour pressure : 210 - 1.300 Pa (20 °C)

Relative density : 0,87 - 0,88 (20 °C)

Method: ASTM D4052

Density : Typical 876 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4,3

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

Oxidizing properties : Data not available

Flammability (liquids) : Flammable liquid and vapour.

Evaporation rate : < 1

Method: ASTM D 3539, nBuAc=1

Conductivity: < 100 pS/m

The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its con-

ductivity 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 : Data not available

Molecular weight : Data not available

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## **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 may occur via inhalation, ingestion, skin absorption,

exposure skin or eye contact, and accidental ingestion.

#### **Acute toxicity**

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Acute oral toxicity : LD 50 (Rat, male and female): > 2000 - <= 5000

Method: Acceptable non-standard method. Remarks: May be harmful if swallowed.

Acute inhalation toxicity : LC 50 (Rat, male and female): > 2 -<= 10 mg/l

Exposure time: 4 h

Test atmosphere: vapour

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

Remarks: LC50 greater than near-saturated vapour concen-

tration.

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

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

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

Remarks: Based on available data, the classification criteria

are not met.

#### Skin corrosion/irritation

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Species Rabbit

Method OECD Test Guideline 404

Remarks Moderately irritating to skin (but insufficient to classify).

Repeated exposure may cause skin dryness or cracking.

## Serious eye damage/eye irritation

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Species Rabbit

Method Test(s) equivalent or similar to OECD Test Guideline 405

Slightly irritating. Remarks

Insufficient to classify.

#### Respiratory or skin sensitisation

#### **Components:**

#### Hydrocarbons, C9, aromatics:

**Species** Guinea pig

Method **OECD Test Guideline 406** 

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

## Germ cell mutagenicity

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Genotoxicity in vitro Method: Test(s) equivalent or similar to OECD Guideline 471

Remarks: Based on available data, the classification criteria

are not met.

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

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473

Remarks: Based on available data, the classification criteria

are not met.

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

476

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Rat

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

475

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

## **Components:**

#### Hydrocarbons, C9, aromatics:

Remarks : Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

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
Hydrocarbons, C9, aromatics	No carcinogenicity classification.
Cumene	Carcinogenicity Category 1B
Benzene	Carcinogenicity Category 1A

Material	Other Carcinogenicity Classification
Cumene	IARC: Group 2B: Possibly carcinogenic to humans
Benzene	IARC: Group 1: Carcinogenic to humans

## Reproductive toxicity

## **Components:**

## Hydrocarbons, C9, aromatics:

Effects on fertility : Species: Rat

Sex: male and female

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Application Route: Inhalation

Method: Other guideline 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

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Exposure routes : Inhalation

Target Organs : Lungs, Central nervous system
Remarks : May cause drowsiness and dizziness.
May cause respiratory irritation.

#### STOT - repeated exposure

## Components:

## Hydrocarbons, C9, aromatics:

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

Auditory system: prolonged and repeated exposures to high

concentrations have resulted in hearing loss in rats.

Kidney: caused kidney effects in male rats which are not con-

sidered relevant to humans

#### Repeated dose toxicity

#### **Components:**

#### Hydrocarbons, C9, aromatics:

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

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

Method : Test(s) equivalent or similar to OECD Test Guideline 452

Target Organs : No specific target organs noted

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## **Aspiration toxicity**

#### **Components:**

#### Hydrocarbons, C9, aromatics:

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

#### 11.2 Information on other hazards

#### **Endocrine disrupting properties**

#### **Product:**

Assessment : The substance/mixture does not contain components consid-

ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

#### **Further information**

**Product:** 

Remarks : Unless indicated otherwise, the data presented is representa-

tive of the product as a whole, rather than for individual com-

ponent(s).

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

## **SECTION 12: Ecological information**

## **12.1 Toxicity**

## **Components:**

## Hydrocarbons, C9, aromatics:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9,2 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Toxic

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

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 3,2 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Toxic

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

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Toxicity to algae/aquatic plants : ErL50 (Pseudokirchneriella subcapitata (algae)): 2,9 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Toxic

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

Toxicity to microorganisms : NOEC (Activated sludge): > 99 mg/l

Exposure time: 0,16 h

Method: OECD Test Guideline 209 Remarks: Practically non toxic: LC/EC/IC50 > 100 mg/l

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

#### 12.2 Persistence and degradability

## **Components:**

Hydrocarbons, C9, aromatics:

Biodegradability : Biodegradation: 78 %

Exposure time: 28 d

Method: OECD Test Guideline 301F Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

#### 12.3 Bioaccumulative potential

## **Components:**

Hydrocarbons, C9, aromatics:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

#### 12.4 Mobility in soil

#### **Components:**

Hydrocarbons, C9, aromatics:

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

particles and will not be mobile.

#### 12.5 Results of PBT and vPvB assessment

#### **Components:**

Hydrocarbons, C9, aromatics:

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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

#### **Product:**

Assessment : The substance/mixture does not contain components considered to

have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### 12.7 Other adverse effects

#### **Product:**

Additional ecological infor-

mation

: Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Additional ecological infor-

mation

: Does not have ozone depletion potential.

## **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 meth-

ods 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

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-

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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.

Local legislation

Remarks For the disposal of waste arising from the product, including

empty containers not cleared, follow the Legislative Decree

152/06 and subsequent amendments.

## **SECTION 14: Transport information**

14.1 UN number or ID number

ADN : 1268 **ADR** 1268 **RID** 1268 **IMDG** 1268 IATA : 1268

14.2 UN proper shipping name

**ADN** : PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

**ADR** PETROLEUM DISTILLATES, N.O.S. RID PETROLEUM DISTILLATES, N.O.S. **IMDG** PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

**IATA** : Petroleum distillates, n.o.s.

14.3 Transport hazard class(es)

**ADN** : 3 **ADR** 3 RID 3 **IMDG** 3 **IATA** : 3

14.4 Packing group

ADN

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Packing group : III
Classification Code : F1
Labels : 3 (N2, F)

**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

ADN

Environmentally hazardous : yes

**ADR** 

Environmentally hazardous : yes

rid

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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

MARPOL Annex 1 rules apply for bulk shipments by sea.

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

Nitrogen is an odourless and invisible gas. Exposure to nitrogen may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined

space entry.

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## **SECTION 15: Regulatory information**

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

lowing entries should be considered: Cumene (Number on list 28)

28)

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).

Conditions of restriction for the fol-

Benzene (Number on list 72, 5, 29,

REACH - List of substances subject to authorisation

(Annex XIV)

Product is not subject to Authorisa-

tion under REACH.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c

FLAMMABLE LIQUIDS

E2 **ENVIRONMENTAL HAZARDS** 

#### Other regulations:

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

Safeguard of health and safety in the workplaces refer to D.Lgs.81/2008 and subsequent amendments.

For waste disposal refer to D.Lgs.152/2006 and subsequent amendments.

Product is subject to Decree-Law N. 105 of 26 June 2015 on the control of the danger of major accidents involving certain dangerous substances, based on Seveso III directive (2012/18/EU).

The national inventory is based on the CAS number 64742-95-6.

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

DSL Listed

**IECSC** Listed

**TSCA** Listed

**KECI** Listed

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PICCS : Listed

TCSI : Listed

AIIC : Listed

NZIoC : 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

2019/1831/EU : Europe. Commission Directive 2019/1831/EU establishing a

fifth list of indicative occupational exposure limit values

IT OEL : Italy. List of indicative limit values for professional exposure to

chemical agents.

2019/1831/EU / TWA : Limit Value - eight hours 2019/1831/EU / STEL : Short term exposure limit IT OEL / TWA : 8 hour exposure limit IT OEL / STEL : 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 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;

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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.

This product is classified as R66 / EUH066 (Repeated exposure may cause skin dryness or cracking). The risk relates to the potential for repeated or prolonged dermal contact. The risk arising from contact is solely related to the physicochemical 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).

# Identified Uses according to the Use Descriptor System Uses - Worker

Title : Manufacture of substance

- Industrial

**Uses - Worker** 

Title : Distribution of substance

- Industrial

**Uses - Worker** 

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

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- Industrial

**Uses - Worker** 

Title : Uses in Coatings

- Industrial

**Uses - Worker** 

Title : Use in Cleaning Agents

- Industrial

**Uses - Worker** 

Title : Uses in Coatings

- Professional

**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 : Lubricants

- Industrial

**Uses - Worker** 

Title : Lubricants

- Professional

Low Environmental Release

**Uses - Worker** 

Title : Lubricants

- Professional

High Environmental Release

**Uses - Worker** 

Title : Metal working fluids / rolling oils

- Industrial

**Uses - Worker** 

Title : Metal working fluids / rolling oils

Professional

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**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 : Functional Fluids

- Professional

Uses - Worker

Title : Functional Fluids

- Industrial

**Uses - Worker** 

Title : Road and construction applications

- Professional

**Uses - Worker** 

Title : Use in laboratories

- Industrial

**Uses - Worker** 

Title : Use in laboratories

- Professional

**Uses - Worker** 

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Title : Water treatment chemicals

- Industrial

**Uses - Worker** 

Title : Water treatment chemicals

- Professional

Identified Uses according to the Use Descriptor System

**Uses - Consumer** 

Title : Functional Fluids

- Consumer

**Uses - Consumer** 

Title : Use as a fuel

- Consumer

**Uses - Consumer** 

Title : Use in Agrochemicals uses

- Consumer

**Uses - Consumer** 

Title : Lubricants

- Consumer

High Environmental Release

**Uses - Consumer** 

Title : Lubricants

- Consumer

Low Environmental Release

**Uses - Consumer** 

Title : Use in Cleaning Agents

- Consumer

**Uses - Consumer** 

Title : Uses in Coatings

- 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** 

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30000000750	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture 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 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 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 exposures (closed systems)PROC1PROC2PRO	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.
Section 2.2	Control of Environmental Exposure

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	1
Substance is complex UVCB.	
Predominantly hydrophobic.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,4E+04
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	2,4E+04
Maximum daily site tonnage (kg/day):	7,9E+04
Frequency and Duration of Use	1 7 -
Continuous release.	
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	100
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-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 pre	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 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	15,9
the required removal efficiency of >= (%)	10,0
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 pl	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	1,0E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	1,0E+04
Conditions and Measures related to external treatment of waste for	
During manufacturing no waste of the substance is generated.	
Conditions and measures related to external recovery of waste	

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During manufacturing no waste of the substance is generated.

## 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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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

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**Exposure Scenario - Worker** 

30000000753	
30000000753	
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
	<b>SPERIO</b>
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 distribu-
	tion and associated laboratory activities.
	tion 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 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 F	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified. 3
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC3	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Drum and small package fill-ingPROC9	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

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Continue 0.0	
Section 2.2 Control of Environmental Exposure	
Substance is complex UVCB.	
Predominantly hydrophobic.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	850
Fraction of Regional tonnage used locally:	2,0E-03
Annual site tonnage (tonnes/year):	1,7
Maximum daily site tonnage (kg/day):	85
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	20
Environmental factors not influenced by risk management	
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):	1,0E-03
Release fraction to wastewater from process (initial release prior to	1,0E-05
RMM):	1,02 00
Release fraction to soil from process (initial release prior to RMM):	1,0E-05
Technical conditions and measures at process level (source) to pr	
-reconnear conditions and measures at brocess lever (source) to br	
Common practices vary across sites thus conservative process release estimates used.	
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	
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  Risk from environmental exposure is driven by freshwater.	
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite	
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.	
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site	arges, air emis-
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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.	arges, air emis- 90 0
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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	arges, air emis- 90 0
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 treatment (%)	arges, air emis- 90 0 0
Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit dischesions and releases to soil  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 treatment (%)  Total efficiency of removal from wastewater after onsite and offsite	arges, air emis- 90 0
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	arges, air emis- 90 0 0 0 lant 93,6 93,6
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 platinated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following	arges, air emis- 90 0 0
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 pereatment (%)  Total efficiency of removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	arges, air emis-  90 0 0 0  lant 93,6 93,6 2,1E+05
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 (%)  Total efficiency of removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)	arges, air emis-  90 0 0 0  lant 93,6 93,6 2,1E+05 2,0E+03
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  Risk from environmental exposure is driven by freshwater.  Prevent discharge of undissolved substance to or recover from onsite wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary 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 pereatment (%)  Total efficiency of removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	arges, air emis- 90 0 0 0 lant 93,6 93,6 2,1E+05 2,0E+03 r disposal

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#### 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

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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

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1.5

## **Exposure Scenario - Worker**

30000000754			
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 MEASURES			
Section 2.1	Control of Worker Exposure			
Product Characteristics				
Physical form of product	Liquid, vapour pressure < 0.5 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				
	an 20°C above ambient temperature (unless stated differently).			

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Ris	sk Management Measures	
General exposures (closed systems)PROC1PROC2PROC	С3	No other specific measures identified.	
General exposures (open systems)PROC4		No other specific measures identified.	
Batch processes at elevated temperaturesOperation is carried out at elevated temperatu (> 20°C above ambient tempe ature). Use in contained batch processesPROC3	re	No other specific measures identified.	
Process samplingPROC3		No other specific measures identified.	
Laboratory activitiesPROC15		No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	

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Mixing operations (open systems)PROC5	No other specific measures identified	d.
ManualTransfer from/pouring from containersPROC8a	No other specific measures identified	d.
Drum/batch transfersPROC8b	No other specific measures identified	d.
Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14	No other specific measures identified	d.
Drum and small package fill- ingPROC9	No other specific measures identified	d.
Equipment cleaning and maintenancePROC8a	No other specific measures identified	d.
Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in	n region:	0,1
Regional use tonnage (tonnes		730
Fraction of Regional tonnage (		130
		730
Annual site tonnage (tonnes/ye		
Maximum daily site tonnage (k		7,3E+03
Frequency and Duration of L	Jse	
Continuous release.		400
Emission Days (days/year):	Character 1 has a laborated and a second	100
	fluenced by risk management	1.0
Local freshwater dilution factor		10
Local marine water dilution fac		100
Other Operational Condition	s affecting Environmental Exposure	1
Release fraction to air from pro	ocess (after typical onsite RMMs con-	1,0E-02
sistent with EU Solvent Emissi		0.05.04
RMM):	r from process (initial release prior to	2,0E-04
	rocess (initial release prior to RMM):	1,0E-04
	easures at process level (source) to pr	event release
	s sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
	sure is driven by freshwater sediment.	
_	ved substance to or recover from onsite	
wastewater.		
No wastewater treatment requ		
	typical removal efficiency of (%)	0
Treat onsite wastewater (prior the required removal efficiency	to receiving water discharge) to provide of >= (%)	0
If discharging to domestic sew	age treatment plant, no secondary	0
	•	

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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	3,1E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r 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	

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

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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

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(http://cefic.org).

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**Exposure Scenario - Worker** 

30000000755	
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 9, PROC 10, PROC 13, PROC 14, 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 < 0.5 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	ns affecting Exposure
	n 20°C above ambient temperature (unless stated differently).
Assumes a good basic standa	ard of occupational hygiene is implemented.
Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1	No other specific measures identified.
General exposures (closed systems) with sample collectionUse in contained systemsPROC2	No other specific measures identified.
Film formation - force drying, stoving and other technologies.(closed systems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2	No other specific measures identified.
Mixing operations (closed systems)General expo-	No other specific measures identified.

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sures (closed sys-		
tems)PROC3		
Film formation - air dry- ingPROC4	No other specific measures identified.	
Preparation of material for	No other specific measures identified.	
applicationMixing opera-		
tions (open sys-		
tems)PROC5		
Spraying (automat- ic/robotic)PROC7	Carry out in a vented booth provided with	n laminar airflow.
ManualSprayingPROC7	Wear a respirator conforming to EN140 v better.	with Type A filter or
Material transfersNon- dedicated facilityPROC8a	No other specific measures identified.	
Material transfersDedicated facilityPROC8b	No other specific measures identified.	
Roller, spreader, flow applicationPROC10	No other specific measures identified.	
Dipping, immersion and pouringPROC13	No other specific measures identified.	
Laboratory activi- tiesPROC15	No other specific measures identified.	
Material trans-	No other specific measures identified.	
fersDrum/batch transfer-	•	
sTransfer from/pouring from		
containersPROC9		
Production or preparation	No other specific measures identified.	
or articles by tabletting,		
compression, extrusion or		
pelletisationPROC14		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1 Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		•
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		7,6E+03
Fraction of Regional tonnage	•	1
Annual site tonnage (tonnes/		7,6E+03
Maximum daily site tonnage (		2,5E+04
Frequency and Duration of		
Continuous release.		
Emission Days (days/year):		300
	nfluenced by risk management	550
Local freshwater dilution factor		10
Local marine water dilution fa		100
		1.50

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Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	9,8E-01
Release fraction to wastewater from process (initial release prior to	7,0E-04
RMM):	
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 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	77,7
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	8,8E+04
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
One Pitters on Language related to	
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

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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

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#### **Exposure Scenario - Worker**

30000000757	
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 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 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 Ris	k Management Measures	
Bulk transfersNon-dedicated facilityPROC8a	No other specific measures identified.	
Automated process with (semi) closed systems.Use in contained systemsPROC2	No other specific measures identified.	
Automated process with (semi) closed systems.Drum/batch transfersUse in contained batch processesPROC3	No other specific measures identified.	
Application of cleaning products in closed systemsPROC2	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC8b	No other specific measures identified.	
Use in contained batch process- esPROC4	No other specific measures identified.	

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Degreasing small objects in cleaning stationPROC13	No other specific measures identifi	ed.	
Cleaning with low-pressure washersPROC10	No other specific measures identifi	ed.	
Cleaning with high pressure	Provide a good standard of genera	I ventilation (not less th	an
washersPROC7	3 to 5 air changes per hour).		
	Limit the substance content in the	product to 5 %.	
ManualSurfacesCleaningPROC10	No other specific measures identifi	ed.	
Storage.PROC1	Store substance within a closed sy	stem.	
	rol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in regi		0,1	
Regional use tonnage (tonnes/year)		320	
Fraction of Regional tonnage used I	ocally:	3,2E-01	
Annual site tonnage (tonnes/year):		100	
Maximum daily site tonnage (kg/day	/):	5,0E+03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		20	
Environmental factors not influer	nced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions afford			
Release fraction to air from process		1,0	
Release fraction to wastewater from RMM):		3,0E-06	
Release fraction to soil from proces		0	
Technical conditions and measur		event release	
Common practices vary across sites lease estimates used.	s thus conservative process re-		
Technical onsite conditions and I sions and releases to soil	measures to reduce or limit discha	arges, air emis-	
Risk from environmental exposure i	s driven by freshwater.		
Prevent discharge of undissolved su			
wastewater.			
No wastewater treatment required.			
Treat air emission to provide a typic		70	
Treat onsite wastewater (prior to recthe required removal efficiency of >:	= (%)	0	
If discharging to domestic sewage to	reatment plant, no secondary	0	
wastewater treatment required.			
Organisational measures to preven			
Do not apply industrial sludge to na			
Sludge should be incinerated, conta	ained or reclaimed.		

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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 8,3E+06		
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
	•	

#### 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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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	
30000000756	
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 RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
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 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 exposures (closed sy tems)PROC1	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Use contained systemsPROC2	
General exposures (closed sy tems)Use in contained systemsPROC2	No other specific measures identified.
Preparation of material for app cationUse in contained batch processesPROC3	No other specific measures identified.
Film formation - air dry- ingOutdoorPROC4	No other specific measures identified.
Film formation - air dryingln-doorPROC4	No other specific measures identified.

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Dramaration of material for appli	No other appoints management identified
Preparation of material for applicationIndoorPROC5	No other specific measures identified.
Preparation of material for applicationOutdoorPROC5	No other specific measures identified.
Material transfersDrum/batch transfersNon-dedicated facilityPROC8a	No other specific measures identified.
Material transfersDrum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Roller, spreader, flow application- IndoorPROC10	No other specific measures identified.
Roller, spreader, flow applicationOutdoorPROC10	No other specific measures identified.
ManualSprayingIndoorPROC11	Carry out in a vented booth or extracted enclosure. , or:
	Wear a full face respirator conforming to EN136 with Type A/P2 filter or better.
ManualSprayingOutdoorPROC11	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours Limit the substance content in the mixture to 50 %. , or: Wear a full face respirator conforming to EN136 with Type A/P2 filter or better.
Dipping, immersion and pouringIndoorPROC13	No other specific measures identified.
Dipping, immersion and pouringOutdoorPROC13	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Hand application - fingerpaints, pastels, adhesivesIn-doorPROC19	No other specific measures identified.
Hand application - fingerpaints, pastels, adhesivesOut-doorPROC19	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.
Section 2.2 Con	trol of Environmental Exposure

Section 2.2	<b>Control of Environmental Exposure</b>	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.	Readily biodegradable.	
Amounts Used		
Fraction of EU tonnage used in region: 0,1		0,1
Regional use tonnage (tonnes/year): 2,2E+03		2,2E+03
Fraction of Regional tonnage used locally: 5,0E-04		5,0E-04
Annual site tonnage (tonnes/year): 1,1		1,1
Maximum daily site tonnage (kg/day): 3,0		3,0

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Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	300
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Release fraction to air from wide dispersive use (regional only):	9,8E-01
Release fraction to wastewater from wide dispersive use:	1,0E-02
Release fraction to soil from wide dispersive use (regional only):	1,0E-02
Technical conditions and measures at process level (source) to pr	*
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, an emis-
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	0
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.	
ordago oriodia do momeratoa, contamoa or rociamoa.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	00,0
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	4,7E+03
total wastewater treatment removal (kg/d)	,
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable	-
regulations.	<b>9</b> -
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	=

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

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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

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**Exposure Scenario - Worker** 

Exposure coeriane Worke	•
30000000758	
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 RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
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	
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or contain-			
ers.Dedicated facilityPROC8b			
Filling/ preparation of equipme	ent	Avoid carrying out activities involving exposure for more	
from drums or containers.Non	-	than 4 hours	
dedicated facilityPROC8a			
Automated process with (sem	i)	No other specific measures identified.	
closed systems. Use in contain	ned		
systemsPROC2			
Automated process with (sem		No other specific measures identified.	
closed systems.Drum/batch tra			
fersUse in contained batch pro	o-		
cessesPROC3			
Semi Automated process. (e.g.	j.:	No other specific measures identified.	
Semi automatic application of	floor		
care and maintenance prod-			
ucts)PROC4			

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ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
ManualSurfacesCleaningPROC13	No other specific measures identified.
Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingIndoorPROC11	Limit the substance content in the product to 1 %.
Cleaning with high pressure washersSprayingOutdoorPROC11	Limit the substance content in the product to 1 %.
ManualSurfacesCleaningPROC10	Limit the substance content in the product to 25 %.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	Limit the substance content in the product to 25 %.
Application of cleaning products in closed systemsPROC4	No other specific measures identified.
Cleaning of medical devic- esPROC4	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	n region:	0,1
Regional use tonnage (tonnes	s/year):	2,0
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/y		1,0E-03
Maximum daily site tonnage (	kg/day):	2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	_
Local freshwater dilution factor: 10		10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
	de dispersive use (regional only):	2,0E-02
Release fraction to wastewate		1,0E-06
Release fraction to soil from wide dispersive use (regional only):		0
	easures at process level (source) to pr	revent release
	s sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental expo		
No wastewater treatment required.		
-	a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide		0

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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.		
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	7,1	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
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 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	<b>EXPOSURE ESTIMATION</b>

### Section 3.1 - Health

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

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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

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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 SCENARIO TITLE
Use in Oil and Gas field drilling and production operations-
Industrial
Sector of Use: SU3
Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,
PROC 8a, PROC 8b
Environmental Release Categories: ERC4
Zirin di inidia i Noidado datagonido. Zirio
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.	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 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
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers. Dedicated facilityPROC8b	No other specific measures identified.
Drilling mud (re- )formulationPROC3	No other specific measures identified.
Drill floor operationsPROC4	No other specific measures identified.
Operation of solids filtering equipment - vapour exposuresPROC4	
Treatment and disposal of filtered solidsPROC3	No other specific measures identified.
Process samplingPROC3	No other specific measures identified.

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General exposures (closed	No other specific measures identified.	
systems)PROC1		
Pouring from small contain-		
ersPROC8a		
General exposures (open	No other specific measures identified.	
systems)PROC4	·	
Equipment cleaning and	No other specific measures identified.	
maintenancePROC8a	·	
Storage.PROC1PROC2	Store substance within a closed system.	
	ĺ	
Section 2.2	Control of Environmental Exposure	
No exposure assessment presented for the environment.		

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

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

#### **Section 3.2 - Environment**

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 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 n	nanaged to at least equivalent levels.		

#### **Section 4.2 - Environment**

No exposure assessment presented for the environment.

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### **Exposure Scenario - Worker**

30000000784	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17, PROC 18 Environmental Release Categories: ERC4, ERC7, ESVOC SpERC 4.6a.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

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 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	Ris	sk Management Measures	
General exposures (closed		No other specific measures identified.	
systems)PROC1PROC2PRO			
General exposures (open sys-	-	No other specific measures identified.	
tems)PROC4			
Bulk transfersDedicated facili-		No other specific measures identified.	
tyPROC8b			
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or containers.Non	ı <b>-</b>		
dedicated facilityPROC8a			
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or contain-			
ers.Dedicated facilityPROC8b	)		
Initial factory fill of equip-		No other specific measures identified.	
mentPROC9			
Operation and lubrication of		No other specific measures identified.	
high energy open equip-			
mentPROC17PROC18			

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ManualRolling, Brush- ingPROC10		No other specific measures identified	d.	
Treatment by dipping and pour- ingPROC13		No other specific measures identified.		
SprayingPROC7		Carry out in a vented booth or extract	cted enclosure.	
Maintenance (of larger plant items) and machine set upDedicated facilityPROC8b		No other specific measures identified.		
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b		Drain down and flush system prior to equipment opening or maintenance.		
Maintenance of small itemsNo dedicated facilityPROC8a	on-	No other specific measures identified	d.	
Remanufacture of reject articlesPROC9		No other specific measures identified	d.	
Storage.PROC1PROC2		Store substance within a closed syst	tem.	
Section 2.2		ntrol of Environmental Exposure		
Substance is complex UVCB.				
Predominantly hydrophobic.				
Readily biodegradable.				
Amounts Used			1	
		-1	104	
Fraction of EU tonnage used			0,1	
Regional use tonnage (tonnes			700	
Fraction of Regional tonnage used			0,14	
Annual site tonnage (tonnes/y			100	
Maximum daily site tonnage (			5,0E+03	
Frequency and Duration of	Use			
Continuous release.				
Emission Days (days/year):			20	
Environmental factors not in	nflu	enced by risk management		
Local freshwater dilution factor	or:		10	
Local marine water dilution fa			100	
		ffecting Environmental Exposure		
			5,0E-03	
Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):			3,0E-05	
			1,0E-03	
		ures at process level (source) to pr		
Common practices vary acros	ss si	tes thus conservative process re-		
lease estimates used.		·		
Technical onsite conditions sions and releases to soil	and	d measures to reduce or limit disch	arges, air emis-	
	)CI Ir	a is driven by freshwater sediment		
Risk from environmental exposure is driven by freshwater sediment.  Prevent discharge of undissolved substance to or recover from onsite				
wastewater.	ived	Substance to or recover from onsite		
No wastewater treatment requ	uired	1.		
	٠ ٥			

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	T	
Treat air emission to provide a typical removal efficiency of (%)	70	
Treat onsite wastewater (prior to receiving water discharge) to provide	e   0	
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	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	2,1E+06	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste f	or disposal	
External treatment and disposal of waste should comply with applicab	le local and/or regional	
regulations.	G	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional		

SECTION 3	<b>EXPOSURE ESTIMATION</b>

## Section 3.1 - Health

regulations.

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

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE</b>
	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 technolo-

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gies, 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** 

30000000785	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- ProfessionalLow Environmental Release
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 8.6c.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
<b>Product Characteristics</b>			
Physical form of product	Liquid, vapour pressure < 0.5 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 exposures (closed sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.
Operation of equipment conta engine oils and similar.PROC		No other specific measures identified.
General exposures (open systems)PROC4	-	No other specific measures identified.
Bulk transfersPROC8b		No other specific measures identified.
Filling/ preparation of equipments from drums or containers. Dedicated facilityPROC8b		No other specific measures identified.
Filling/ preparation of equipments from drums or containers.Nor dedicated facilityPROC8a		Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of henergy open equipmentIndoorPROC17PROC18	igh	Provide extraction ventilation at points where emissions occur.

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Operation and lubrication of high energy open equipmentOut-doorPROC17	Ensure operation is undertaken of Avoid carrying out activities involved than 4 hours	
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures identi	fied.
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b	Drain down system prior to equipr nance.	ment opening or mainte-
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	Drain or remove substance from e in or maintenance.	equipment prior to break-
Engine lubricant servicePROC9	No other specific measures identi	fied.
ManualRolling, BrushingPROC10	No other specific measures identified	fied.
SprayingPROC11	Provide a good standard of gener (5 to 15 air changes per hour). Avoid carrying out activities involve than 4 hours , or: Wear a respirator conforming to E better.	ing exposure for more
Treatment by dipping and pouringPROC13	No other specific measures identified	fied.
Storage.PROC1PROC2	Store substance within a closed s	ystem.
Section 2.2 Con	trol of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in reg	ion:	0,1
Regional use tonnage (tonnes/year	):	12
Fraction of Regional tonnage used	locally:	5,0E-04
Annual site tonnage (tonnes/year):		5,8E-03
Maximum daily site tonnage (kg/day	y):	1,6E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influen	nced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions aff	•	1
Release fraction to air from process	s (initial release prior to RMM):	1,0E-02

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Release fraction to wastewater 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 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.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
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 (%)	00.0
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	41
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 fo	-
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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.

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

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**Exposure Scenario - Worker** 

30000000786	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	
	Lubricants- ProfessionalHigh Environmental Release
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

SECTION 2	OPERATIONAL CONDITIONS AND RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
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 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 exposures (closed sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.
Operation of equipment conta engine oils and similar.PROC		No other specific measures identified.
General exposures (open systems)PROC4	-	No other specific measures identified.
Bulk transfersPROC8b		No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a		Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of h energy open equipmentIn- doorPROC17PROC18	igh	Provide extraction ventilation at points where emissions occur.

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Operation and lubrication of hi	iah	Avoid carrying out operation for more than 4 hours.	
Operation and lubrication of high energy open equipmentOut-		Avoid carrying out operation for more than 4 hours.	
doorPROC17			
Maintenance (of larger plant items)		No other specific measures identified.	
and machine set upPROC8b	,	·	
Maintenance (of larger plant it		Drain down system prior to equipment opening or mainte-	-
and machine set upOperation		nance.	
carried out at elevated temper			
ture (> 20°C above ambient to perature). Dedicated facili-	:111-		
tyPROC8b			
Maintenance of small itemsOp	era-	Drain or remove substance from equipment prior to break	(-
tion is carried out at elevated t		in or maintenance.	
perature (> 20°C above ambie			
temperature).Non-dedicated fa	acili-		
tyPROC8a	20	No of consecutive and the CC of	
Engine lubricant servicePROC9		No other specific measures identified.	
ManualRolling, BrushingPROC10		No other specific measures identified.	
Wandan tolling, Brashing, 100	510	The other openio medeuree identined.	
SprayingPROC11		Provide a good standard of general or controlled ventilation	on
		(5 to 15 air changes per hour).	
		Avoid carrying out activities involving exposure for more	
		than 4 hours , or:	
		Wear a respirator conforming to EN140 with Type A filter	or
		better.	٥.
Treatment by dipping and pou	r-	No other specific measures identified.	
ingPROC13			
Storage.PROC1PROC2		Store substance within a closed system.	
Section 2.2	Cont	rol of Environmental Exposure	
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in regio		on: 0,1	

Section 2.2 Control of Environmental Exposure					
Substance is complex UVCB.					
Predominantly hydrophobic.					
Readily biodegradable.					
Amounts Used					
Fraction of EU tonnage used	in region:	0,1			
Regional use tonnage (tonnes	s/year):	12			
Fraction of Regional tonnage	used locally:	5,0E-04			
Annual site tonnage (tonnes/year):		5,8E-03			
Maximum daily site tonnage (kg/day):		1,6E-02			
Frequency and Duration of Use					
Continuous release.					
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 wide dispersive use (regional only): 1,5E-01					
Release fraction to air from wide dispersive use (regional only): 5,0E-02					

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Release fraction to soil from wide dispersive use (regional only):	5,0E-02
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.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
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	40
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	
External treatment and disposal of waste should comply with applicable	e local and/or regiona
regulations.	
regulations.  Conditions and measures related to external recovery of waste  External recovery and recycling of waste should comply with applicable	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.		

## Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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	

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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.

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

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**Exposure Scenario - Worker** 

30000000787	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Metal working fluids / rolling oils- 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 9, PROC 10, PROC 13, PROC 17 Environmental Release Categories: ERC4, ESVOC SpERC 4.7a.v1
Scope of process	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

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 kPa at STP	
Concentration of the Substance in Mixture/Article differently).,		
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assume a second at the second the second and second at the		

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 exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.PROC8bPROC5PROC9	nt No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Metal machining operationsPROC17	No other specific measures identified.
Treatment by dipping and pour ingPROC13	No other specific measures identified.

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SprayingPROC7	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
ManualRolling, BrushingPROC10	No other specific measures identified.
Automated metal roll- ing/formingUse in contained sys- temsOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC2	No other specific measures identified.
Semi-automated metal roll- ing/formingOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC17	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
Equipment cleaning and maintenanceDedicated facilityPROC8b	No other specific measures identified.
Equipment cleaning and mainte- nanceNon-dedicated facili- tyPROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCE	3.	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	l in region:	0,1
Regional use tonnage (tonne	es/year):	10
Fraction of Regional tonnage	e used locally:	1
Annual site tonnage (tonnes,		10
Maximum daily site tonnage	(kg/day):	500
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution factor:		100
	ons affecting Environmental Exposure	
Release fraction to air from p	process (initial release prior to RMM):	2,0E-02
Release fraction to wastewa RMM):	ter from process (initial release prior to	3,0E-05
Release fraction to soil from	process (initial release prior to RMM):	0
Technical conditions and r	neasures at process level (source) to	prevent release
Common practices vary acro	ss sites thus conservative process re-	
<b>Technical onsite condition</b>	s and measures to reduce or limit disc	charges, air emis-
sions and releases to soil		<u>.</u>
Risk from environmental exp	osure is driven by freshwater.	
	olved substance to or recover from onsite	)

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wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide	0
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	8,3E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r 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	EXPOSURE ESTIMATION

#### Section 3.1 - Health

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

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

		GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
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#### 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

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#### 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** 

30000000788	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Metal working fluids / rolling oils- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17 Environmental Release Categories: ERC8a, ERC8b, ESVOC SpERC 9.6b.v1
Scope of process	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.

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 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration o	f Use		
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Condition	ons affecting Exposure		
	an 20°C above ambient temperature (unless stated differently).		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Manager		nent Measures
General exposures (closed systems)PROC1PROC2PROC3		No other specific measures identified.
Bulk transfersPROC8b		No other specific measures identified.
Filling/ preparation of equipment from drums or contain- ers.PROC5PROC8aPROC8bPROC9		No other specific measures identified.
Process samplingDedicated facilityPROC8b		No other specific measures identified.
Metal machining operationsPROC17		Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
ManualRolling, BrushingPRO	C10	No other specific measures identified.
SprayingPROC11		Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).

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		Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better.		
		A/F2 liller of better.		
Treatment by dipping and pouringPROC13		No other specific measu	res identified.	
Equipment cleaning and maintenance-PROC8aPROC8b		Drain down system prior to equipment opening or maintenance.		
Storage.PROC1PROC2		Store substance within a	Store substance within a closed system.	
Section 2.2	Control of Env	vironmental Exposure		
Substance is complex UVCB		•		1
Predominantly hydrophobic.				1
Readily biodegradable.				1
Amounts Used				-
Fraction of EU tonnage used	in region:		0,1	
Regional use tonnage (tonne			5,0	1
Fraction of Regional tonnage			5,0E-04	1
Annual site tonnage (tonnes/			2,5E-03	1
Maximum daily site tonnage (			6,8E-03	1
Frequency and Duration of			0,02 00	1
Continuous release.				1
Emission Days (days/year):			365	1
Environmental factors not i	nfluenced by ri	sk management	1 000	1
Local freshwater dilution factor			10	1
Local marine water dilution factor:		100	1	
Other Operational Conditio		vironmental Exposure	1	1
Release fraction to air from w			5,0E-02	1
Release fraction to wastewater from wide dispersive use:		2,5E-02	1	
Release fraction to soil from			0	1
Technical conditions and m			-	1
Common practices vary acros				1
lease estimates used.		•		
Technical onsite conditions	and measures	to reduce or limit discha	arges, air emis-	1
sions and releases to soil				
Risk from environmental expo	osure is driven b	y freshwater.		
No wastewater treatment required.			]	
Treat air emission to provide a typical removal efficiency of (%)		0		
Treat onsite wastewater (prior to receiving water discharge) to provide		0		
the required removal efficiency of >= (%)				
If discharging to domestic sewage treatment plant, no secondary		0		
wastewater treatment required.			4	
Organisational measures to				4
Do not apply industrial sludge to natural soils.				
Sludge should be incinerated	, contained or re	claimed.		
Conditions and Massaures	alatad ta musi-	inal aguaga traatmaart	lant	1
Conditions and Measures r			•	-
Estimated substance remova	i ironi wastewate	er via domestic sewage	93,6	J

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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	18
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

#### 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			

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

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Continu A.A. Hanith	

#### 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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1
EXPOSURE SCENARIO TITLE
Use as binders and release agents- Industrial
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
Covers the use as binders and release agents including ma-
terial transfers, mixing, application (including spraying and
brushing), and handling of waste.
J., J.

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 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		
Material transfersUse in con-	No other specific measures identified.		
tained sys-			
temsPROC1PROC2PROC3			
Drum/batch transfersPROC8b	No other specific measures identified.		
Mixing operations (closed sys-	No other specific measures identified.		
tems)PROC3			
Mixing operations (open sys-	No other specific measures identified.		
tems)PROC4			
Mold formingPROC14	No other specific measures identified.		
Casting operations(open sys-	Provide extraction ventilation at points where emissions oc-		
tems)Operation is carried out a	t cur.		
elevated temperature (> 20°C			
above ambient tempera-			
ture). Aerosol generation due to			
elevated process temperature-			
PROC6			
SprayingMachinePROC7	Minimise exposure by partial enclosure of the operation or		

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	equipment and provide extract ventila	ation at openings.	
SprayingManualPROC7	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 4 hours		
ManualRolling, Brush- ingPROC10	No other specific measures identified.		
Dipping, immersion and pouringPROC13	No other specific measures identified.		
Storage.PROC1PROC2	Store substance within a closed syste	em.	
Section 2.2 Co	ontrol of Environmental Exposure		
Substance is complex UVCB.	-		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in r	egion:	0,1	
Regional use tonnage (tonnes/ye		70	
Fraction of Regional tonnage use		1	
Annual site tonnage (tonnes/year		70	
Maximum daily site tonnage (kg/		3,5E+03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		20	
Environmental factors not influ	uenced 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 proce	1,0		
Release fraction to wastewater fr	3,0E-06		
RMM):			
	cess (initial release prior to RMM):	0	
	sures at process level (source) to pro	event release	
	ites thus conservative process re-		
lease estimates used.	d management and make an limit disab		
	d measures to reduce or limit discha	arges, air emis-	
sions and releases to soil	ro in driven by freebyyeter		
Risk from environmental exposur	d substance to or recover from onsite		
wastewater.			
	d		
No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)		80	
Treat onsite wastewater (prior to receiving water discharge) to provide		0	
the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, no secondary		0	
wastewater treatment required.			
Organisational measures to pr	event/limit release from site	1	
Do not apply industrial sludge to			
	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)	6,5E+06		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03		
Conditions and Massures related to external treatment of waste for disposal			

#### 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	peen used to estimate workplace exposures unless otherwise

indicated.

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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 Georgia Tronco		
3000000791		
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 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
Bulk transfersUse in contained systemsPROC1PROC2PROC	The same of same masses and same and sa
Drum/batch transfer- sPROC8aPROC8b	No other specific measures identified.
Mixing operations (closed systems)PROC3	No other specific measures identified.
Mixing operations (open systems)PROC4	No other specific measures identified.
Mold formingPROC14	No other specific measures identified.
Casting operations(open systems)Operation is carried out a elevated temperature (> 20°C above ambient temperature).PROC6	Provide extraction ventilation at points where emissions occur.
SprayingMachinePROC11	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. , or:

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	Wear a respirator conforming to EN14 better.	40 with Type A filter or	
SprayingManualPROC11	Provide a good standard of general or controlled ventilation (5		
grayga	to 15 air changes per hour).		
	Avoid carrying out activities involving	exposure for more than	
	4 hours	•	
ManualRolling, Brush- ingPROC10	No other specific measures identified	•	
Storage.PROC1PROC2	Store substance within a closed syste	em.	
Section 2.2 C	ontrol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in r	region:	0,1	
Regional use tonnage (tonnes/ye		30	
Fraction of Regional tonnage use		5,0E-04	
Annual site tonnage (tonnes/yea		1,5E-02	
Maximum daily site tonnage (kg/		4,1E-02	
Frequency and Duration of Us		, -	
Continuous release.	-		
Emission Days (days/year):	365		
Environmental factors not influ	uenced by risk management		
Local freshwater dilution factor:	, ,	10	
Local marine water dilution facto	r:	100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from wide	dispersive use (regional only):	9,5E-01	
Release fraction to wastewater f		2,5E-02	
Release fraction to soil from wide		2,5E-02	
	Technical conditions and measures at process level (source) to prevent release		
	sites thus conservative process re-		
	lease estimates used.		
	nd measures to reduce or limit disch	arges, air emis-	
sions and releases to soil		<u> </u>	
Risk from environmental exposu			
No wastewater treatment require			
Treat air emission to provide a ty		0	
the required removal efficiency of	receiving water discharge) to provide f >= (%)	0	
If discharging to domestic sewage wastewater treatment required.	ge treatment plant, no secondary	0	
	ovent/limit release from site		
	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			
	om wastewater via domestic sewage	93,6	
treatment (%)			

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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	82
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

#### 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

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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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Exposure ocenano - Worker		
3000000792		
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 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	
	8 hours (unless stated differently).	
Other Operational Conditio		
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	
Transfer from/pouring from containersPROC8b	No other specific measures identified.	
Mixing in contain- ers.PROC4	No other specific measures identified.	
Spraying/ fogging by manual applicationPROC11	Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Spraying/ fogging by machine applicationPROC11	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20., or: Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Ad hoc manual application via trigger sprays, dipping, etc.PROC13	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	

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Castian 0.0	Control of Engineers and all Engineers	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	<u> </u>
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used		0,1
Regional use tonnage (tonne		610
Fraction of Regional tonnage	used locally:	2,0E-03
Annual site tonnage (tonnes/	year):	1,2
Maximum daily site tonnage	(kg/day):	3,4
Frequency and Duration of		
Continuous release.		
Emission Days (days/year):		365
	influenced by risk management	,
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	1100
•	vide dispersive use (regional only):	9,0E-01
Release fraction to wastewat		1,0E-02
	wide dispersive use (regional only):	9,0E-02
	neasures at process level (source) to pr	
	ss sites thus conservative process re-	
lease estimates used.	ss sites thus conservative process re-	
	s and measures to reduce or limit disch	organ air amia
sions and releases to soil	s and measures to reduce or minit discri	arges, air einis-
Risk from environmental exp	osure is driven by soil	T
No wastewater treatment req		
	a typical removal efficiency of (%)	0
	r to receiving water discharge) to provide	0
the required removal efficience		U
	wage treatment plant, no secondary	0
		U
wastewater treatment require	o prevent/limit release from site	
•	•	
Do not apply industrial sludge		
Sludge should be incinerated	, contained of reclaimed.	
Conditions and Massaures		t
	elated to municipal sewage treatment p	
	I from wastewater via domestic sewage	93,6
treatment (%)		00.0
	om wastewater after onsite and offsite	93,6
(domestic treatment plant) RI		<b>_</b>
	age (MSafe) based on release following	4,7E+03
total wastewater treatment re		
Assumed domestic sewage t		2,0E+03
	elated to external treatment of waste fo	
•	sal of waste should comply with applicable	local and/or regional
regulations.		
Conditions and measures r	elated to external recovery of waste	
External recovery and recycli	ng of waste should comply with applicable	local and/or regional

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regulations.

#### Section 3.1 - Health

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

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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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30000000793	
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 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			
	8 hours (unless stated differently).		
Other Operational Condition	ns 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		
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
General exposures (closed systems)PROC1PROC2	No other specific measures identified.		
Use as a fuel(closed systems)PROC16PROC3	No other specific measures identified.		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.		
Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in region: 0,1			
Regional use tonnage (tonnes/year): 15		15	

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Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Toto  Trequency and Duration of Use  Continuous release.  Emission Days (days/year):  Local freshwater dilution factor:  Local marine water dilution saffecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Relea	F (	T a
Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Enission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Cocal marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  OFfechnical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process re-  ease estimates used.  Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater.  No wastewater treatment required.  Freat air emission to provide a typical removal efficiency of (%)  Freat onsite wastewater (prior to receiving water discharge) to provide  the required removal efficiency of >= (%)  f discharging to domestic sewage treatment plant, no secondary  wastewater treatment required.  Organisational measures to prevent/limit release from site  Oon ont 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  reatment (%)  Organisational measures to prevent/limit release following  of the province of removal from wastewater after onsite and offsite  domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following  otal wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	Fraction of Regional tonnage used locally:	1
Continuous release.		
Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Local marine water dilution factor:  Cother Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from massures to reduce or limit discharges, air emissions and release to soil  Risk from environmental exposure is driven by freshwater.  No wastewater treatment required.  Freat air emission to provide a typical removal efficiency of (%)  Freat air emission to provide a typical removal efficiency of (%)  Freat onsite wastewater (prior to receiving water discharge) to provide  No wastewater treatment required.  Conditions and Measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Conditions and Measures related to municipal sewage treatment plant  Estimated substance removal from wastewater via domestic sewage  reatment (%)  Conditions and Measures related to municipal sewage treatment plant  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	Maximum daily site tonnage (kg/day):	750
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Progranisational 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 (page treatment (%))  Total efficiency of removal from wastewater after onsite and offsite (page treatment plant) (page treatment) (page treatme	the required removal efficiency of >= (%)	
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Conditions and Measures related to municipal sewage treatment plant  Estimated substance removal from wastewater via domestic sewage  (reatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	wastewater treatment required.	
Conditions and Measures related to municipal sewage treatment plant  Estimated substance removal from wastewater via domestic sewage reatment (%)  Total efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	Organisational measures to prevent/limit release from site	
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Estimated substance removal from wastewater via domestic sewage  (reatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  (Maximum allowable site tonnage (MSafe) based on release following (otal wastewater treatment removal (kg/d)  (Assumed domestic sewage treatment plant flow (m3/d)  (Conditions and Measures related to external treatment of waste for disposal  (Combustion emissions limited by required exhaust emission controls.  (Waste combustion emissions considered in regional exposure assessment.  (Conditions and measures related to external recovery of waste	Conditions and Measures related to municipal sewage treatment p	lant
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following (otal wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.  Conditions and measures related to external recovery of waste	Estimated substance removal from wastewater via domestic sewage treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.  Conditions and measures related to external recovery of waste	Total efficiency of removal from wastewater after onsite and offsite	93,6
Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.  Conditions and measures related to external recovery of waste	Maximum allowable site tonnage (MSafe) based on release following	1,5E+06
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Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.  Conditions and measures related to external recovery of waste		
Waste combustion emissions considered in regional exposure assessment.  Conditions and measures related to external recovery of waste		- 1
		ent.
	Conditions and measures related to external recovery of waste	

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

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 23.11.2023

1.5 28.03.2024 800010059269 Print Date 04.04.2024

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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 oceriano - Worke	·-
30000000794	
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		
Physical form of product	Liquid, vapour pressure < 0.5 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 Condition	ns affecting Exposure	
	an 20°C above ambient temperature (unless stated differently)	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	d No other specific measures identified.
Refueling.Dedicated facili- tyPROC8b	No other specific measures identified.
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
Use as a fuel(closed systems)PROC16	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		

According to EC No 1907/2006 as amended as at the date of this SDS

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Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	15
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	7,5E-03
Maximum daily site tonnage (kg/day):	2,1E-02
Frequency and Duration of Use	,
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
ocal freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	1
Release fraction to air from wide dispersive use (regional only):	1,0E-04
Release fraction to wastewater from wide dispersive use:	1,0E-05
Release fraction to soil from wide dispersive use (regional only):	1,0E-05
Technical conditions and measures at process level (source) to p	
Common practices vary across sites thus conservative process re-	
ease estimates used.	
Fechnical onsite conditions and measures to reduce or limit disc	harges, air emis-
sions and releases to soil	<b>3</b> ,
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Freat air emission to provide a typical removal efficiency of (%)	0
Freat onsite wastewater (prior to receiving water discharge) to provide	0
he required removal efficiency of >= (%)	
f discharging to domestic sewage treatment plant, no secondary	0
vastewater 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	93,6
reatment (%)	
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	53
otal wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	or disposal
Combustion emissions limited by required exhaust emission controls.	-
Waste combustion emissions considered in regional exposure assessi	ment.
Conditions and measures related to external recovery of waste This substance is consumed during use and no waste of substance is	

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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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 occurred worker		
30000000796			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Functional Fluids- Professional		
Use Descriptor	Sector of Use: SU22		
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a,		
	PROC 9, PROC 20		
	Environmental Release Categories: ERC9a, ERC9b,		
	ESVOC SpERC 9.13b.v1		
	<u>'</u>		
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants,		
	insulators, refrigerants, hydraulic fluids in professional equip-		
	ment including maintenance and related material transfers.		
	Ĭ		

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 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	
Drum/batch transfersNon- dedicated facilityPROC8a	Use drum pumps.	
Transfer from/pouring from cortainersPROC9	n- No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.PROC9	ent No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.	
Operation of equipment contai ing engine oils and similar.PROC20	in- No other specific measures identified.	
Operation of equipment contai ing engine oils and simi- lar.Operation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC20	·	
Remanufacture of reject arti-	No other specific measures identified.	·

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alea DD OCO	T		
clesPROC9	Drain daves aviatem prior to a svipre		
Equipment maintenance- PROC8a	Drain down system prior to equipment opening or maintenance.		
Storage.PROC1PROC2	Store substance within a closed syst	em.	
Section 2.2 Co	ntrol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in re	egion:	0,1	
Regional use tonnage (tonnes/ye		15	
Fraction of Regional tonnage use		5,0E-04	
Annual site tonnage (tonnes/year		7,5E-03	
Maximum daily site tonnage (kg/c		2,1E-02	
Frequency and Duration of Use	• ,		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influ	enced by risk management	000	
Local freshwater dilution factor:	checa by hisk management	10	
Local marine water dilution factor:		100	
	ffecting Environmental Exposure	100	
Release fraction to air from wide		5,0E-02	
		2,5E-02	
Release fraction to wastewater from wide dispersive use:  Release fraction to soil from wide dispersive use (regional only):		2,5E-02	
	ures at process level (source) to pro		
Common practices vary across si			
lease estimates used.			
Technical onsite conditions and	d measures to reduce or limit disch	arges, air emis-	
sions and releases to soil			
Risk from environmental exposure	e is driven by freshwater.		
No wastewater treatment required	d.		
Treat air emission to provide a typ	pical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide		0	
the required removal efficiency of	>= (%)		
If discharging to domestic sewage	treatment plant, no secondary	0	
wastewater treatment required.			
Organisational measures to pre	event/limit release from site		
Do not apply industrial sludge to r	natural soils.		
Sludge should be incinerated, cor	ntained or reclaimed.		
Conditions and Measures relate	ed to municipal sewage treatment p	lant	
	m wastewater via domestic sewage	93,6	
Total efficiency of removal from w	astewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		'	
	(MSafe) based on release following	52	
	total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatr		2,0E+03	
	ed to external treatment of waste for	r disposal	

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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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE</b>	
	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 oceriano - Worker	
30000000795	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9 Environmental Release Categories: ERC7, ESVOC SpERC 7.13a.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

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 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		
	8 hours (unless stated differently).		
Other Operational Conditio			
	in 20°C above ambient temperature (unless stated differently).		
	ard of occupational hygiene is implemented.		
S S	, , , , , , , , , , , , , , , , , , , ,		
Contributing Scenarios	Risk Management Measures		
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
Filling of arti- cles/equipment(closed sys-	No other specific measures identified.		
tems)PROC9			
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	No other specific measures identified.		
General exposures (closed systems)PROC2	No other specific measures identified.		
General exposures (open systems)PROC4	No other specific measures identified.		
Remanufacture of reject articlesPROC9	No other specific measures identified.		
Equipment maintenance- PROC8a	No other specific measures identified.		

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Storage.PROC1PROC2	Store substance within a closed system.		
	·		
Section 2.2	Control of Environmental Exposure	1	
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	15	
Fraction of Regional tonnage	used locally:	0,67	
Annual site tonnage (tonnes/	year):	10	
Maximum daily site tonnage (		500	
Frequency and Duration of			
Continuous release.			
Emission Days (days/year):		20	
	influenced by risk management	1 = 0	
Local freshwater dilution factor		10	
Local marine water dilution fa		100	
	ns affecting Environmental Exposure	100	
	rocess (initial release prior to RMM):	5,0E-03	
	er from process (initial release prior to	3,0E-05	
RMM):		3,02-03	
	process (initial release prior to RMM):	1,0E-03	
Technical conditions and m	neasures at process level (source) to pro	event release	
Common practices vary acros	ss sites thus conservative process re-		
lease estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil			
	osure is driven by freshwater.		
	lved substance to or recover from onsite		
wastewater.	ived substance to or recover from onsite		
No wastewater treatment req	uired		
	a typical removal efficiency of (%)	0	
	r to receiving water discharge) to provide	0	
the required removal efficience		U	
	wage treatment plant, no secondary	0	
wastewater treatment require		U	
	p prevent/limit release from site		
Do not apply industrial sludge	•		
Sludge should be incinerated			
Siddge Silodid be ilicilierated	, contained of reclaimed.		
Conditions and Measures r	elated to municipal sewage treatment p	lant	
	I from wastewater via domestic sewage	93,6	
treatment (%)			
	om wastewater after onsite and offsite	93,6	
(domestic treatment plant) RI	MMs (%)		
Maximum allowable site tonn	age (MSafe) based on release following	8,3E+05	
total wastewater treatment re	moval (kg/d)		
Assumed domestic sewage to		2,0E+03	
	elated to external treatment of waste for	r disposal	
External treatment and disposal of waste should comply with applicable local and/or regional			

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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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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 oceriano - Worker	
300000000802	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Road and construction applications- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8d, ERC8f, ESVOC SpERC 8.15.v1
Scope of process	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.

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 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	• / :	
	8 hours (unless stated differently).	
Other Operational Conditio		
	n 20°C above ambient temperature (unless stated differently).	
Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Drum/batch transfersNon- dedicated facilityPROC8a	No other specific measures identified.	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
Drum/batch transfersDedi-	Ensure operation is undertaken outdoors.	
cated facilityOperation is carried out at elevated tem- perature (> 20°C above ambient tempera- ture).PROC8b	Avoid carrying out activities involving exposure for more than 4 hours	
ManualRolling, Brush-ingPROC10	Ensure operation is undertaken outdoors.	
Spraying/ fogging by machine applicationOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC11	Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Limit the substance content in the mixture to 50 %.	
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.	

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chine applicationPROC11	Wear a respirator conforming to EN140 with Type A filter or better.	
Dipping, immersion and pouringPROC13	No other specific measures identified.	
Drum and small package fillingPROC9	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	Drain down system prior to equipment opening or maintenance.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	
Predominantly hydrophobic.	•	
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		22
Fraction of Regional tonnage		5,0E-04
Annual site tonnage (tonnes/	•	1,1E-02
		3,0E-02
Maximum daily site tonnage (kg/day):  Frequency and Duration of Use		0,0L 0Z
Continuous release.	030	
Emission Days (days/year):	365	
	influenced by risk management	303
Local freshwater dilution fact		10
Local marine water dilution factor:		100
	ons affecting Environmental Exposure	100
	vide dispersive use (regional only):	9,5E-01
		1,0E-02
Release fraction to wastewater from wide dispersive use: 1,0E-02 Release fraction to soil from wide dispersive use (regional only): 4,0E-02		
	neasures at process level (source) to pr	
	ss sites thus conservative process re-	
lease estimates used.	oo dhoo mad oonoon van vo processe re	
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		a. g.c., a cc
	osure is driven by freshwater.	
No wastewater treatment rec		
	a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide		0
the required removal efficiency of >= (%)		
If discharging to domestic se	0	
wastewater treatment required.		
Organisational measures to	o prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated	d, contained or reclaimed.	
Conditions and Measures	related to municipal sewage treatment p	lant
	al from wastewater via domestic sewage	93,6
treatment (%)	3	
Total efficiency of removal fro	om wastewater after onsite and offsite	93,6
(domestic treatment plant) R	MMs (%)	

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Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	77
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

#### 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 be indicated.	peen used to estimate workplace exposures unless otherwise

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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 occitatio 11	O RO
30000000806	
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 AI MEASURES	ND RISK MANAGEMENT
Section 2.1	Control of Worker Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure 0.5 - 10 k	Pa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product differently).,	up to 100% (unless stated
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		•
	an 20°C above ambient temperature ard of occupational hygiene is imple	
Contributing Scenarios	Risk Management Measures	
Laboratory activitiesPROC15	No other specific measures identif	ïed.
CleaningPROC10	No other specific measures identif	ïied.
Section 2.2	Control of Environmental Expos	sure
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes/year):		2,5
Fraction of Regional tonnage used locally:		0,8
Annual site tonnage (tonnes/year):		2,0
Maximum daily site tonnage (kg/day):		100
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
<b>Environmental factors not</b>	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution fa	actor:	100
	ns affecting Environmental Expo	

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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):	
Release fraction to soil from process (initial release prior to RMM):	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.	
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 freshwater sediment.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
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	3,1E+03
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
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 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

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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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30000000810	
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 RIS	SK MANAGEMENT
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 1 differently)	00% (unless stated
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		
Assumes use at not more that	an 20°C above ambient temperature (unles	ss stated differently).
Assumes a good basic stand	lard of occupational hygiene is implemente	ed.
Contributing Scenarios	Risk Management Measures	
Laboratory activi- tiesPROC15	No other specific measures identified.	
CleaningPROC10	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCE	).	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		2,0
Fraction of Regional tonnage used locally:		5,0E-04
Annual site tonnage (tonnes/year):		1,0E-03
Maximum daily site tonnage (kg/day):		2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year): 365		365
	influenced by risk management	
Local freshwater dilution fact		10
Local marine water dilution fa	actor:	100

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elease fraction to air from wide dispersive use (regional only):  elease fraction to wastewater from wide dispersive use:  elease fraction to soil from wide dispersive use (regional only):  elease fraction to soil from wide dispersive use (regional only):  ochical conditions and measures at process level (source) to prevent release ommon practices vary across sites thus conservative process rease estimates used.  echnical onsite conditions and measures to reduce or limit discharges, air emisons and releases to soil lisk from environmental exposure is driven by freshwater.  ocuste wastewater treatment required.  reat air emission to provide a typical removal efficiency of (%)  ocuste wastewater (prior to receiving water discharge) to provide erequired removal efficiency of >= (%)  discharging to domestic sewage treatment plant, no secondary astewater treatment required.  rganisational measures to prevent/limit release from site  ocustions and Measures related to municipal sewage treatment plant estimated substance removal from wastewater via domestic sewage estment (%)  onditions and Measures related to municipal sewage treatment plant estimated substance removal from wastewater via domestic sewage estment (%)  ontal efficiency of removal from wastewater after onsite and offsite lomestic treatment plant) RMMs (%)  aximum allowable site tonnage (MSafe) based on release following tall wastewater treatment removal (kg/d)  sumed domestic sewage treatment plant flow (m3/d)  2,0E+03  onditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or regio		
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xternal treatment and disposal of waste should comply with applicable local and/or regio	Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
xternal treatment and disposal of waste should comply with applicable local and/or regio	Conditions and Measures related to external treatment of waste for	r disposal
gulations.	regulations.	G
onditions and measures related to external recovery of waste	Conditions and measures related to external recovery of waste	
xternal recovery and recycling of waste should comply with applicable local and/or region	External recovery and recycling of waste should comply with applicable	local and/or regiona
gulations.	regulations	_

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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

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

According to EC No 1907/2006 as amended as at the date of this SDS

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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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30000000815	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Water treatment chemicals- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC3, ERC4, ESVOC SpERC 3.22a.v1
Scope of process	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.

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 Condition			
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		
Bulk transfersUse in contained systemsPROC2	No other specific measures identified.		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
General exposures (closed systems)Use in contained batch processesPROC3	No other specific measures identified.		
General exposures (open systems)PROC4	No other specific measures identified.		
Pouring from small containersPROC13	No other specific measures identified.		
Equipment maintenance- PROC8a	Drain down and flush system prior to equipment opening or maintenance.		
Storage.PROC1	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			

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Amounts Used	1	
Fraction of EU tonnage used in region:	0,1	
Regional use tonnage (tonnes/year):	55	
Fraction of Regional tonnage used locally:	0,54	
Annual site tonnage (tonnes/year):	30	
Maximum daily site tonnage (kg/day):	100	
Frequency and Duration of Use		
Continuous release.		
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):	5,0E-02	
Release fraction to wastewater from process (initial release prior to	9,5E-01	
RMM):		
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 disch	arges, air emis-	
sions and releases to soil	goo, oo	
Risk from environmental exposure is driven by freshwater sediment.		
Onsite waste water treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide	95,8	
the required removal efficiency of >= (%)	00,0	
If discharging to domestic sewage treatment plant, no secondary	34,9	
wastewater treatment required.	04,0	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
ordage should be interfaced, contained or residinted.		
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	95,8	
(domestic treatment plant) RMMs (%)	33,0	
Maximum allowable site tonnage (MSafe) based on release following	100	
total wastewater treatment removal (kg/d)	100	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for	1	
External treatment and disposal of waste should comply with applicable		
•	local allu/ol regional	
regulations.		
Conditions and managers related to external resources of waste		
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

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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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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 destruite Tremer	
30000000820	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Water treatment chemicals- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.

SECTION 2	OPERATIONAL CONDITIONS AND RIS	K 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 10	00% (unless stated
stance in Mixture/Article	differently).,	•
Frequency and Duration of	Use	
	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	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
General exposures (closed systems)PROC3	No other specific measures identified.	
General exposures (open systems)PROC4	No other specific measures identified.	
Pouring from small containersPROC13	No other specific measures identified.	
Equipment maintenance- PROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		•
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		25
Fraction of Regional tonnage used locally: 6,0E-02		6,0E-02

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	1
Annual site tonnage (tonnes/year):	1,5
Maximum daily site tonnage (kg/day):	4,0
Frequency and Duration of Use	
Continuous release.	
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 wide dispersive use (regional only):	1,0E-02
Release fraction to wastewater from wide dispersive use:	9,9E-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 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.	
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	0,7
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	48
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	-
<del>-</del>	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	<b>5</b>
·	

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

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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** 

30000001122	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC16, PC17 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1
Scope of process	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

SECTION 2	OPERATIONAL CONDITIONS AND MEASURES	D RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at	STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100	0 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		2.200
covers skin contact area (cm2):		468
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		4
covers use up to (times/day of use):		1
Exposure (hours/event): 0,17		0,17
Other Operational Condition	ons affecting Exposure	

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Heat transfer fluids Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	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 ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Hydraulic fluids Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year

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1: , , , , , , , , , , , , , , , , , , ,
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 ventila-
tion.
Covers use in room size of 34 m3
Covers exposure up to 0,17 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	15
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	7,5E-03
Maximum daily site tonnage	(kg/day):	2,1E-02
Frequency and Duration of	Use	
Continuous release.		
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 Conditio	ns affecting Environmental Exposure	
	vide dispersive use (regional only):	5,0E-02
Release fraction to wastewat		2,5E-02
Release fraction to soil from wide dispersive use (regional only):		2,5E-02
<b>Conditions and Measures r</b>	elated to municipal sewage treatment	olant
Estimated substance removal from wastewater via domestic sewage		93,6
treatment (%)		
Maximum allowable site tonnage (MSafe) based on release following		52
total wastewater treatment re	· • ·	
		2,0E+03
<b>Conditions and Measures r</b>	elated to external treatment of waste for	or 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

The Hydrocarbon Block Method has been used to calculate environmental exposure with

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the Petrorisk 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** 

30000001121	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12c.v1
Scope of process	Covers consumer uses in liquid fuels.

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 kPa	at STP
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 amount up to (g):		37.500
covers skin contact area (cm2):		420
Frequency and Duration of	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event):		2
Other Operational Conditi	one affecting Evnosure	

## Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Fuels Liquid: Automotive Refuelling.	Covers concentrations up to 100 %	
	covers use up to 52 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 210,00 cm2	
	For each use event, covers amount up to 37.500 g	
	Covers outdoor use.	
	Covers use in room size of 100 m3	
	Covers exposure up to 0,05 hours/event	
Fuels Liquid Scooter Refuelling.	Covers concentrations up to 100 %	
	covers use up to 52 day/year	

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	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
Finals Lieurid Condon	Covers exposure up to 0,03 hours/event
Fuels Liquid, Garden Equipment - Use.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 420,00 cm2
	For each use event, covers amount up to 750 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 0,03 hours/event
Fuels Liquid: Home space heater fuel.	Covers concentrations up to 100 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.000 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid: Lamp oil.	Covers concentrations up to 100 %
	covers use up to 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 100 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,01 hours/event
	TOTAL SAPOSATO AP TO GOT HOURS OF THE

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	210
Fraction of Regional tonnage	used locally:	5,0E-04

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Annual site tonnage (tonnes/year):	0,11
Maximum daily site tonnage (kg/day):	0,29
Frequency and Duration of Use	
Continuous release.	
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 wide dispersive use (regional only):	1,0E-04
Release fraction to wastewater from wide dispersive use:	1,0E-05
Release fraction to soil from wide dispersive use (regional only):	1,0E-05
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	750
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessment	ient.
One difference and accommon related to contampolar accommon for the	
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 consumer exposures unless otherwise indicated.

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

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

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 technolo-

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gies, 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** 

30000001120	
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	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 50 %	
Amounts Used		
Unless stated otherwise.		
covers skin contact area (cm2): 857,5		857,5
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year): 365		365
covers use up to (times/day of use):		1
Exposure (hours/event): 4		4
Other Operational Condition	ons affecting Exposure	

#### Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Fertilizers Lawn and garden preparations.	Covers concentrations up to 15 %	
	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 exposure up to 4 hours/event	
Plant protection products	Covers concentrations up to 15 %	
	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, assumes swallowed amount of 0,3 g

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	20
Fraction of Regional tonnage	used locally:	2,0E-03
Annual site tonnage (tonnes/	year):	4,0E-02
Maximum daily site tonnage		0,11
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution fa		100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from w	vide dispersive use (regional only):	9,0E-01
Release fraction to wastewat	er from wide dispersive use:	1,0E-02
Release fraction to soil from	wide dispersive use (regional only):	9,0E-02
<b>Conditions and Measures r</b>	elated to municipal sewage treatment p	plant
Estimated substance remova	Il from wastewater via domestic sewage	93,6
treatment (%)		
	age (MSafe) based on release following	227
total wastewater treatment re		
Assumed domestic sewage t		2,0E+03
	elated to external treatment of waste for	-
External treatment and dispo al regulations.	sal of waste should comply with applicable	e local and/or region-

External recovery and recycling of waste should comply with applicable local and/or region

Conditions and measures related to external recovery of waste

nal regulations.

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

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
OLUTION T	COLDANGE TO CHECK COMM ENAMOR WITH THE
	EXPOSURE SCENARIO
	EXPOSURE SCENARIO

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#### 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** 

30000001119		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants - Consumer High Environmental Release	
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1	
Scope of process	Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.	

SECTION 2	OPERATIONAL CONDITIONS AND RIMEASURES	SK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STF	0
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 amount up to (g):		6.390
covers skin contact area (cm	2):	468
Frequency and Duration of Use		
Unless stated otherwise.		
covers use up to (times/day of use):  Exposure (hours/event):  6		1
		6
Other Operational Conditions affecting Exposure		

## Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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
	Covers use in room size of 20m3
	Covers use under typical household ventilation.
_	Covers exposure up to 4 hours/event

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Adhesives, sealants Glues DIY-use (carpet glue, tile	Covers concentrations up to 30 %
glue, wood parquet glue).	
	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	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 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event
Lubricants, greases, re- lease 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 20 %
	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 exposure up to 4,00 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	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

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	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,17 hours/event	
Polishes and wax blends Polishes, wax / cream	Covers concentrations up to 50 %	
(floor, furniture, shoes).		
	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 under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 1,23 hours/event	
Polishes and wax blends	Covers concentrations up to 50 %	
Polishes, spray (furniture, shoes).		
,	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 under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,33 hours/event	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	12
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	5,8E-03
Maximum daily site tonnage	(kg/day):	1,6E-02
Frequency and Duration of		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management Local freshwater dilution factor: 10		
		10
		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from w	vide dispersive use (regional only):	1,5E-01
Release fraction to wastewat	er from wide dispersive use:	5,0E-02
Release fraction to soil from	wide dispersive use (regional only):	5,0E-02
Conditions and Measures related to municipal sewage treatment plant		
Estimated substance remova	I from wastewater via domestic sewage	93,6
treatment (%)		
	age (MSafe) based on release following	40
total wastewater treatment re		
Assumed domestic sewage t	reatment plant flow (m3/d)	2,0E+03

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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 consumer exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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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## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 23.11.2023

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**Exposure Scenario - Consumer** 

20000004444		
30000001118		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants - Consumer Low Environmental Release	
Use Descriptor	Sector of Use: SU21	
-	Product Categories: PC1, PC24, PC31	
	Environmental Release Categories: ERC9a, ERC9b,	
	ESVOC SpERC 9.6d.v1	
	20 V 00 OPENO 0.00.V1	
Scope of process	Covers the consumer use of formulated lubricants in closed	
ocope of process		
	and open systems including transfer operations, application,	
	operation of engines and similar articles, equipment mainte-	
	nance and disposal of waste oil.	

SECTION 2	OPERATIONAL CONDITIONS A MEASURES	ND RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
Covers concentration up to (%): 100 %		00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6.390
covers skin contact area (cm2):		468
Frequency and Duration of Use		
Unless stated otherwise.		
covers use up to (times/day	of use):	1
Exposure (hours/event): 6		6
Other Operational Conditions affecting Exposure		

#### Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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
	Covers use in room size of 20m3
	Covers use under typical household ventilation.
	Covers exposure up to 4 hours/event

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Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	
glue, wood parquet glue).	
	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	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 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 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 20 %
	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 exposure up to 4,00 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	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

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	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 50 %
	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 under typical household ventilation.
	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 50 %
	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 under typical household ventilation.
_	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.	•		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	12	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/	year):	5,8E-03	
Maximum daily site tonnage (	(kg/day):	1,6E-02	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influenced by risk management			
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
	ns affecting Environmental Exposure		
	ride dispersive use (regional only):	1,0E-02	
Release fraction to wastewater from wide dispersive use:		1,0E-02	
Release fraction to soil from wide dispersive use (regional only):		1,0E-02	
Conditions and Measures related to municipal sewage treatment plant			
Estimated substance removal from wastewater via domestic sewage		93,6	
treatment (%)			
Maximum allowable site tonnage (MSafe) based on release following		41	
total wastewater treatment removal (kg/d)			
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03	

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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 consumer exposures unless otherwise indicated.

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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** 

30000001117	
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 Expose	ure
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 k	Pa at STP
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):	13.800
covers skin contact area (cm2):		857,50
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		4
Exposure (hours/event):		8
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.	-	
Covers use at ambient temp	oraturos	

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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 0,1 g
	Covers use under typical household ventilation.

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	Covers use in room size of 20m3	
	Covers exposure up to 0,25 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
instant action (aerosol		
sprays). pesticides (excipi-		
ent only).		
one only).	covers use up to 365 day/year	
	covers use up to 4 times/day of use	
	For each use event, covers amount up to 0,5 g	
	Covers use under typical household ventilation.	
	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 /0	
1 ,	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 under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8,00 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
continuous action (solid and liquid). pesticides (excipient only).		
5111 <b>y</b> ).	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 under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8,00 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 1 %	
products Washing car window.	Covers concentrations up to 1 70	
	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	Covers concentrations up to 10 %	
products Pouring into radiator.		
	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	
	For each use event, covers amount up to 2.000 a	

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	Γυ
	tion.
	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 %
<b>J</b>	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 under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,50 hours/event
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, 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 under typical household ventilation.
	Covers use in room size of 20m3
	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 under typical household ventilation.

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	Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 1,5 %
ners, paint removers Wa-	' ,
terborne 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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,2 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Solvent rich, high solid, water borne paint.	20,000
•	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,2 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Aerosol spray can.	
. ,	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 24 m3
	Covers exposure up to 0,33 hours/event
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall	Covers concentrations up to 50 %
paper-, sealant-remover).	
paper, socialit femover).	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Lubricants, greases, re-	Covers concentrations up to 100 %
lease products Liquids.	<u>'</u>
	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 ventila-
	tion.

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	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 20 %
	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 exposure up to 4 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	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 under typical household ventilation.
	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.	acuera una un ta 205 deviluer
	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 under typical household ventilation.
	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 1 times/day of use
	covers use up to 128 day/year
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	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 15 %
	covers use up to 128 day/year

regulations.

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	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 under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,17 hours/event
Welding and soldering products (with flux coatings or flux cores.), flux products	Covers concentrations up to 20 %
	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 under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1,00 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	5,1
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/		2,6E-03
Maximum daily site tonnage	(kg/day):	7,0E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
		9,5E-01
Release fraction to wastewater 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
	Il from wastewater via domestic sewage	93,6
treatment (%)		
Maximum allowable site tonnage (MSafe) based on release following		18
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable local and/or region-		
al regulations.		
Conditions and measures	related to external recovery of waste	
Conditions and measures related to external recovery of waste		

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

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#### 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**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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** 

30000001109		
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, ERC8b, 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 MEASURES	AND RISK MANAGEMENT
Section 2.1	Control of Consumer Exposu	re
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kP	a at STP
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):	13.800
covers skin contact area (cm2):		857,50
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.		
Carrage upon at ampliant toman	a wa 4:	

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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
	Covers use in room size of 20m3

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	Covers use under typical household ventilation.
	Covers exposure up to 4 hours/event
Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	Ouvers concentrations up to 30 %
glue, wood parquet glue).	
giao, wood parquot giao).	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
Adhaniyan analanta Clua	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	account to C day/year
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	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 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Avoid using when windows closed.
	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
	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 ventila-
	tion.
	Covers use in room size of 34 m3

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	Covers exposure up to 0,17 hours/event
Anti-Freeze and de-icing	Covers concentrations up to 30 %
products Lock de-icer.	'
•	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 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 under typical household ventilation.
	Covers use in room size of 20m3
Biocidal products (e.g. Dis-	Covers exposure up to 0,50 hours/event  Covers concentrations up to 5 %
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, 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 under typical household ventilation.
	Covers use in room size of 20m3
	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,	Covers concentrations up to 15 %
glass cleaners).	
glass cleaners).	covers use up to 128 day/year
glass cleaners).	covers use up to 128 day/year covers use up to 1 times/day of use
glass cleaners).	
glass cleaners).	covers use up to 1 times/day of use
glass cleaners).	covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,00 cm2
glass cleaners).	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
glass cleaners).	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 under typical household ventilation.

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ners, paint removers Wa-	T
terborne latex wall paint.	
terborne 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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Solvent 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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Aerosol spray can.	·
	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
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 50 %
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Fillers and putty.	Covers concentrations up to 2 %
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Fillers, Putties Plasters and	Covers concentrations up to 2 %

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floor equalizers.	
	covers use up to 12 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 13.800 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Modelling clay.	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 g
Finger paints	Covers concentrations up to 1,25 %
	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
Non-metal-surface treatment products Waterborne latex wall paint.	Covers concentrations up to 1,5 %
istor trail 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 under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 2,20 hours/event
Non-metal-surface treat- ment products Solvent rich, high solid, water borne paint.	Covers concentrations up to 27,5 %
	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 744 g
	Covers use under typical household ventilation.
	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 50 %
	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
Non-metal-surface treat-	Covers concentrations up to 50 %

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mont products Domovers	T
ment products Removers	
(paint-, glue-, wall paper-,	
sealant-remover).	covers use up to 2 day/year
	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 under typical household ventilation.
	Covers use in room size of 20 m3
Tell and the control	Covers exposure up to 2,00 hours/event
Ink and toners	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): 71,40 cm2
	For each use event, covers amount up to 40 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 2,20 hours/event
Leather tanning, dye, finishing, impregnation and care products Polishes, wax / cream (floor, furniture,	Covers concentrations up to 50 %
shoes).	
	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 under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1,23 hours/event
Leather tanning, dye, finishing, impregnation and care products Polishes, spray (furniture, shoes).	Covers concentrations up to 50 %
	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 under typical household ventilation.
	Covers use in room size of 20m3
	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 ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event

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Lubricanto arragona re	Course concentrations up to 20.0/
Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	covers use up to 10 day/year
	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 exposure up to 4 hours/event
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	covers was up to C day/ves
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, wax / cream	
(floor, furniture, shoes).	
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, spray (furniture,	'
shoes).	
	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 under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Textile dyes, finishing and	Covers concentrations up to 10 %
impregnating products;	Covers concentrations up to 10 %
including bleaches and	
other processing aids	
other processing aids	covers use up to 365 day/year
	covers use up to 10 sos 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 under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1,00 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		

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	T
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	270
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,13
Maximum daily site tonnage (kg/day):	0,37
Frequency and Duration of Use	
Continuous release.	
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 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 p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	840
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or region-
al 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 consumer exposures unless otherwise		
indicated		

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk 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.	

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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.