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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

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

week) ์

TOXAPEL - Pediatrie Otravă Centrul: 021.318.36.06.

Orar: 8:00 to 15:0

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.

#### **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-

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ways.

Specific target organ toxicity - single ex-

posure, Category 3, Respiratory Tract

H335: May cause respiratory irritation.

Specific target organ toxicity - single exposure, 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

PHYSICAL HAZARDS: Hazard statements

H226 Flammable liquid and vapour.

**HEALTH HAZARDS:** 

H304 May be fatal if swallowed and enters airways.

H335 May cause respiratory irritation. May cause drowsiness or dizziness. H336 **ENVIRONMENTAL HAZARDS:** 

Toxic to aquatic life with long lasting effects. H411

Supplemental Hazard

Statements

EUH066 cracking. Repeated exposure may cause skin dryness or

**Prevention:** Precautionary statements

Keep away from heat, hot surfaces, sparks, open

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

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

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

No precautionary phrases.

Disposal:

Dispose of contents/ container to an approved waste P501

disposal plant.

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#### 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 Skin Irrit.2; H315 Eye Irrit.2; H319 Muta.1B; H340 Carc.1A; H350 STOT RE1; H372 Aquatic Chronic3; H412	>= 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 temporary 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. Continued inhalation may result in unconsciousness and

death.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

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

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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 facili-

ty: 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 burn-

ing 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.

#### 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).

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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.

## 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

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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 handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 1$  m/s until fill pipe submerged to twice its

diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use

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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 storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

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

reduce the risk.

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

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).

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

## **SECTION 8: Exposure controls/personal protection**

# 8.1 Control parameters

## **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form	Control parameters	Basis
	00.00.6	of exposure)	10	DO 051
Cumene	98-82-8	TWA	10 ppm	RO OEL
			50 mg/m3	
			ontribution to the total bur	den via dermal
	exposure po	ossible		
Cumene		STEL	50 ppm	RO OEL
			250 mg/m3	
			ontribution to the total bur	den via dermal
	exposure po		T 40	0040/4004/5
Cumene		TWA	10 ppm	2019/1831/E
			50 mg/m3	U
	Further info	rmation: A skin notation	on assigned to the occupa	tional exposure
	limit value ir	ndicates the possibility	of significant uptake thro	ugh the skin., In-
	dicative			
Cumene		STEL	50 ppm	2019/1831/E
			250 mg/m3	U
	Further info	rmation: A skin notation	on assigned to the occupa	tional exposure
			of significant uptake thro	
	dicative	iaioaioo iiio poodioiiii)	or organicanic apraise and	g.:
Benzene	71-43-2	TWA	1 ppm	RO OEL
20200			3,25 mg/m3	
	Further info	rmation: may cause ca	ancer, can cause genetic	damage Substan-
			n via dermal exposure pos	
Benzene	tiai continua	TWA	0,25 ppm	Shell Internal
Denzene		1000	0,8 mg/m3	Standard
			0,6 1119/1113	
				(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**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Benzene	71-43-2	S-phenyl- mercapturic acid: 25 µg/g creatinine (Urine)	End of shift	RO BAT
		total phenol: 50 mg/l (Urine)	End of shift	RO BAT
		t.t muconic acid:	End of shift	RO BAT

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500 μg/g creatinine (Urine)

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

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 ap le to identify a single representative PNEC for	opropriate 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.

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#### Personal protective equipment

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

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

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

> protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

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

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. Contami-

izer is recommended.

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

use

For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure.

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

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.

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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 specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing appa-

ratus.

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

: 7 %(V)

Lower explosion limit / Lower flammability limit

0,6 %(V)

Flash point : 38 - 50 °C

Method: IP 170

Auto-ignition temperature : 507 °C

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Decomposition temperature

Decomposition tempera: Data not available

ture

pH : Data not available

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

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can greatly influence the conductivity of a liquid

Surface tension : Data not available

Molecular weight : Data not available

## **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

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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

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

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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

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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

Remarks : Slightly irritating.

Insufficient to classify.

#### Respiratory or skin sensitisation

#### Components:

## Hydrocarbons, C9, aromatics:

Species : Guinea pig

Method : OECD Test Guideline 406

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

## Germ cell mutagenicity

## **Components:**

#### Hydrocarbons, C9, aromatics:

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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

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

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#### Reproductive toxicity

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Effects on fertility : Species: Rat

Sex: male and female 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

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

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.

## **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

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

ADR

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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.

## **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,

Conditions of restriction for the following entries should be considered:

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mixtures and articles (Annex XVII)

Cumene (Number on list 28)

Benzene (Number on list 72, 5, 29,

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).

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.

FLAMMABLE LIQUIDS

E2 ENVIRONMENTAL HAZARDS

#### Other regulations:

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

P5c

Product is subject to Law No.59/2016 on the control of major accident hazards involving 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

PICCS : Listed

TCSI : Listed

AIIC : Listed

NZIoC : Listed

#### 15.2 Chemical safety assessment

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

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#### **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

RO BAT : Romania. Biological limit values

RO OEL : Romania. Occupational Exposure Limits

2019/1831/EU / TWA : Limit Value - eight hours 2019/1831/EU / STEL : Short term exposure limit RO OEL / TWA : Long term exposure limit RO 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; 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.

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

- Industrial

**Uses - Worker** 

Title : Uses in Coatings

- Industrial

**Uses - Worker** 

Title : Use in Cleaning Agents

Industrial

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**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

Uses - Worker

Title : Use as binders and release agents

- Industrial

**Uses - Worker** 

Title : Use as binders and release agents

- Professional

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**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** 

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

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- 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.

RO / EN

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**Exposure Scenario - Worker** 

Exposure occitatio Worke	•
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 Condition	ns affecting Exposure	
	an 20°C above ambient temperature (unless stated differently). and of occupational hygiene is implemented.	

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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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 - 10
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 >= (%)	
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** 

Exposure coeriano Wor	•••
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
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.
	January Januar

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.			

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 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.

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

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atment (%)	3,6	
•	3,6	
mestic treatment plant) RMMs (%)		
	1E+05	
al wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d) 2,0E		
nditions and Measures related to external treatment of waste for dis		

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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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## **Exposure Scenario - Worker**

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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			
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	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, compres sion, 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 i	n region:	0,1	
Regional use tonnage (tonnes		730	
Fraction of Regional tonnage	used locally:	1	
Annual site tonnage (tonnes/y		730	
Maximum daily site tonnage (	7,3E+03		
Frequency and Duration of	1,02,00		
Continuous release.			
Emission Days (days/year):	100		
Environmental factors not in	1.00		
Local freshwater dilution facto	10		
Local marine water dilution fac	100		
	s affecting Environmental Exposure		
	ocess (after typical onsite RMMs con-	1,0E-02	
sistent with EU Solvent Emiss		.,	
Release fraction to wastewate RMM):	2,0E-04		
Release fraction to soil from p	1,0E-04		
	easures at process level (source) to pr		
	s 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			
	sure is driven by freshwater sediment.		
Prevent discharge of undissolved substance to or recover from onsite			
wastewater.			
No wastewater treatment requ			
Treat air emission to provide a	0		
Treat onsite wastewater (prior the required removal efficience	0		
	yage 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	olant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	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 for	r disposal
External treatment and disposal of waste should comply with applicable	e local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	_

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has b	een 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** 

CXPOSUIE SCENATIO - WC	
30000000755	
OFOTION 4	EVENOUEE COENADIO TITLE
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	
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	
	in 20°C above ambient temperature (unless stated differently).
	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 dry- ing, stoving and other tech- nologies.(closed sys- tems)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-	No other specific measures identified.	
ingPROC4	γ ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο	
Preparation of material for	No other specific measures identified.	
applicationMixing opera-	·	
tions (open sys-		
tems)PROC5		
Spraying (automat-	Carry out in a vented booth provided with	n laminar airflow.
ic/robotic)PROC7		
ManualSprayingPROC7	Wear a respirator conforming to EN140 v better.	vith Type A filter or
	bottor.	
Material transfersNon-	No other specific measures identified.	
dedicated facilityPROC8a		
Material transfersDedicated	No other specific measures identified.	
facilityPROC8b		
Roller, spreader, flow appli-	No other specific measures identified.	
cationPROC10		
Dipping, immersion and	No other specific measures identified.	
pouringPROC13		
Laboratory activi-	No other specific measures identified.	
tiesPROC15	N 1 10 10 11 10 11	
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,	Two other specific measures identified.	
compression, extrusion or		
pelletisationPROC14		
Equipment cleaning and	No other specific measures identified.	
maintenancePROC8a	·	
Storage.PROC1	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	1
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		T
Fraction of EU tonnage used		0,1
Regional use tonnage (tonnes/year):		7,6E+03
Fraction of Regional tonnage		7.05.00
Annual site tonnage (tonnes/		7,6E+03
Maximum daily site tonnage		2,5E+04
Frequency and Duration of	USE	
Continuous release.		200
Emission Days (days/year): 300  Environmental factors not influenced by risk management		300
Local freshwater dilution factors		10
		100
Local manne water unution factor.		100

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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 RMM):	7,0E-04
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 release estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges air emis-
sions and releases to soil	arges, an enns-
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	77,7
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8,8E+04
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.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional

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

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	NOT
OF OTION 4	EVECULES COSMADIO TITLE
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 RIS	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 10 differently).,	00% (unless stated
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	ns affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unles	s stated differently).
Assumes a good basis atandard of assumptional busines is implemented		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
Bulk transfersNon-dedicated facilityPROC8a	- No other specific measures identified.
Automated process with (semi) closed systems. Use in contained systems PROC2	
Automated process with (semi) closed systems.Drum/batch tra fersUse in contained batch processesPROC3	ns-
Application of cleaning product closed systemsPROC2	s in 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	al ventilation (not less than
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	rstem.
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		0,1
Regional use tonnage (tonnes/year		320
Fraction of Regional tonnage used	locally:	3,2E-01
Annual site tonnage (tonnes/year):	,	100
Maximum daily site tonnage (kg/da	у):	5,0E+03
Frequency and Duration of Use		
Continuous release.		20
Emission Days (days/year): Environmental factors not influe	need by rick management	20
Local freshwater dilution factor:	nced by risk management	10
Local marine water dilution factor:		100
Other Operational Conditions aff	ecting Environmental Exposure	100
Release fraction to air from process		1,0
Release fraction to wastewater from RMM):		3,0E-06
Release fraction to soil from proces	ss (initial release prior to RMM):	0
Technical conditions and measu	res at process level (source) to pr	event release
Common practices vary across site		
lease estimates used.		
sions and releases to soil	measures to reduce or limit disch	arges, air emis-
Risk from environmental exposure		
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 (%)		70
the required removal efficiency of >		0
If discharging to domestic sewage	treatment plant, no secondary	0
wastewater treatment required.	and Nimel & males are for any M	
Organisational measures to prev		
Do not apply industrial sludge to na		
Sludge should be incinerated, cont	ameu or recialineu.	

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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	
3000000756	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics	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	Risk Management Measures
General exposures (closed sy tems)PROC1	
Filling/ preparation of equipm from drums or containers.Use contained systemsPROC2	
General exposures (closed sy tems)Use in contained systemsPROC2	vs- No other specific measures identified.
Preparation of material for ap cationUse in contained batch processesPROC3	pli- 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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Dranguation of material for any	II. No other energia messagger identified
Preparation of material for app cationIndoorPROC5	li- No other specific measures identified.
Preparation of material for app cationOutdoorPROC5	li- 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	on- No other specific measures identified.
Roller, spreader, flow applicationOutdoorPROC10	No other specific measures identified.
ManualSprayingIndoorPROC1	, or:
	Wear a full face respirator conforming to EN136 with Type A/P2 filter or better.
ManualSprayingOutdoorPROC	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, adhesivesIndoorPROC19	
Hand application - fingerpaints pastels, adhesivesOut-doorPROC19	, No other specific measures identified.
Storage.PROC1	Store substance within a closed system.
Section 2.2	Control of Environmental Exposure

Section 2.2	<b>Control of Environmental Exposure</b>	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		0,1
Regional use tonnage (tonne	s/year):	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>5</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 operation worker		
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 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	
Filling/ preparation of equipme	nt	No other specific measures identified.	
from drums or contain-			
ers.Dedicated facilityPROC8b			
Filling/ preparation of equipme	∍nt	Avoid carrying out activities involving exposure for more	
from drums or containers.Non-	-	than 4 hours	
dedicated facilityPROC8a			
Automated process with (semi	i)	No other specific measures identified.	
closed systems.Use in contain	ıed		
systemsPROC2			
Automated process with (semi	i)	No other specific measures identified.	
closed systems.Drum/batch tra	ans-		
fersUse in contained batch pro	)-		
cessesPROC3			
Semi Automated process. (e.g	<b>J</b> .:	No other specific measures identified.	
Semi automatic application of		·	
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 washers ers Rolling, Brushing no spraying PROC10	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		rol of Environmental Exposure	
Substance is complex UVCB.	ı		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in regi	on:	0,1
Regional use tonnage (tonnes	s/year)	):	2,0
Fraction of Regional tonnage	used I	ocally:	5,0E-04
Annual site tonnage (tonnes/)			1,0E-03
Maximum daily site tonnage (	kg/day	<i>(</i> ):	2,7E-03
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):			365
Environmental factors not i		nced by risk management	
Local freshwater dilution factor	or:		10
Local marine water dilution fa			100
		ecting Environmental Exposure	
Release fraction to air from w			2,0E-02
Release fraction to wastewate			1,0E-06
Release fraction to soil from v			0
Technical conditions and measures at process level (source) to prevent release			event release
	ss sites	s thus conservative process re-	
lease estimates used.			
	and i	measures to reduce or limit discha	arges, air emis-
sions and releases to soil			T
Risk from environmental expo		s driven by freshwater.	
No wastewater treatment requ			
Treat air emission to provide			0
Treat onsite wastewater (prio	r to red	ceiving 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	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

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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** 

Process samplingPROC3

	Exposure decirate Worker		
3000000783			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Use in Oil and Gas field drilling and production operations-		
	Industrial		
Use Descriptor	Sector of Use: SU3		
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,		
	PROC 8a, PROC 8b		
	Environmental Release Categories: ERC4		
	g		
Scope of process	Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment.
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	
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.

No other specific measures identified.

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Store substance within a closed system.  Control of Environmental Exposure
Store substance within a closed system
No other specific measures identified.
No other specific measures identified.
No other specific measures identified.
_

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**

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.		
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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**

No exposure assessment presented for the environment.

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

·I
EXPOSURE SCENARIO TITLE
Lubricants- Industrial
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
openo modivi
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.			

			4
Contributing Scenarios	Ris	sk Management Measures	
General exposures (closed		No other specific measures identified.	
systems)PROC1PROC2PRO	C3		
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.Nor	า-		
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 identifie	d.		
Treatment by dipping and pour ingPROC13	- No other specific measures identifie	No other specific measures identified.		
SprayingPROC7	Carry out in a vented booth or extra	cted enclosure.		
Maintenance (of larger plant items) and machine set upDed cated facilityPROC8b		No other specific measures identified.		
Maintenance (of larger plant items) and machine set upOperation is carried out at elevate temperature (> 20°C above ambient temperature). Dedicated facilityPROC88		o equipment opening or		
Maintenance of small itemsNor dedicated facilityPROC8a	n- No other specific measures identifie	d.		
Remanufacture of reject articlesPROC9	No other specific measures identifie	d.		
Storage.PROC1PROC2	Store substance within a closed sys	tem.		
	Control of Environmental Exposure			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Readily biodegradable.				
Amounts Used				
	ragion	101		
Fraction of EU tonnage used in		0,1		
Regional use tonnage (tonnes/year):		700		
Fraction of Regional tonnage u		0,14		
Annual site tonnage (tonnes/ye		100		
Maximum daily site tonnage (k		5,0E+03		
Frequency and Duration of U	se			
Continuous release.				
Emission Days (days/year):		20		
<b>Environmental factors not in</b>	fluenced by risk management			
Local freshwater dilution factor	•	10		
Local marine water dilution fac	tor:	100		
	s affecting Environmental Exposure	•		
	cess (initial release prior to RMM):	5,0E-03		
Release fraction to wastewater RMM):	3,0E-05			
	ocess (initial release prior to RMM):	1,0E-03		
	asures at process level (source) to p			
	sites thus conservative process re-			
lease estimates used.	ones mas concertants process to			
Technical onsite conditions	and measures to reduce or limit disch	narges, air emis-		
sions and releases to soil				
	ure is driven by freshwater sediment.			
<del>-</del>	ed substance to or recover from onsite			
wastewater.				
No wastewater treatment requi	red.	1		

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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	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	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 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

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** 

Exposure Scenario - Worke	;I
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.

OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES			
Control of Worker Exposure			
Liquid, vapour pressure < 0.5 kPa at STP			
Covers use of substance/product up to 100% (unless stated			
differently).,			
Frequency and Duration of Use			
8 hours (unless stated differently).			
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
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 outdoors. Avoid carrying out activities involving exposure for more than 4 hours		
Maintenance (of larger plant items) and machine set upPROC8b		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 system prior to equip nance.	ment opening or maint	Э-
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a		Drain or remove substance from equipment prior to breakin or maintenance.		
Engine lubricant servicePROC	9	No other specific measures identi	fied.	
ManualRolling, BrushingPROC	210	No other specific measures identi	fied.	
SprayingPROC11		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 , or:  Wear a respirator conforming to EN140 with Type A filter or better.		
Treatment by dipping and pour ingPROC13	Treatment by dipping and pour-ingPROC13		fied.	
Storage.PROC1PROC2		Store substance within a closed s	ystem.	
Section 2.2	Conti	ol of Environmental Exposure		
Substance is complex UVCB.		, and the second		1
Predominantly hydrophobic.				1
Readily biodegradable.				•
Amounts Used			<u>I</u>	•
Fraction of EU tonnage used in	n regio	on:	0,1	
Regional use tonnage (tonnes			12	•
Fraction of Regional tonnage u			5,0E-04	•
Annual site tonnage (tonnes/ye			5,8E-03	•
Maximum daily site tonnage (k		):	1,6E-02	
Frequency and Duration of U				
Continuous release.				
Emission Days (days/year):			365	
<b>Environmental factors not in</b>		ced by risk management		
Local freshwater dilution factor			10	
Local marine water dilution fac			100	
		cting Environmental Exposure		
Release fraction to air from pro	ocess	(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 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)	41
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	-
regulations.	3
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	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	

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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** 

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30000000786	
	<del>,</del>
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 RISK MAN MEASURES	NAGEMENT
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% (u differently).,	nless 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 R	isk Management Measures
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
Operation of equipment containi engine oils and similar.PROC20	
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of high energy open equipmentIndoorPROC17PROC18	Provide extraction ventilation at points where emissions occur.

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Operation and lubrication of high energy open equipmentOut-doorPROC17	Avoid carrying out operation for r	nore than 4 hours.
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures ident	ified.
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 equip 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 in or maintenance.	equipment prior to break-
Engine lubricant servicePROC9	No other specific measures ident	ified.
ManualRolling, BrushingPROC10	No other specific measures ident	ified.
SprayingPROC11	Provide a good standard of gene (5 to 15 air changes per hour). Avoid carrying out activities involutan 4 hours, or: Wear a respirator conforming to I better.	ving exposure for more
Treatment by dipping and pour-ingPROC13	No other specific measures ident	ified.
Storage.PROC1PROC2	Store substance within a closed s	system.
Section 2.2 Contr	rol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region	on:	0,1
Regional use tonnage (tonnes/year)		12
Fraction of Regional tonnage used lo	ocally:	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 affe		
Release fraction to air from wide dis	persive 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	revent 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	olant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	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	r disposal
External treatment and disposal of waste should comply with applicable	e local and/or regiona
regulations.	
regulations.	
	e local and/or regiona

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

## 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 Managem	nent 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**

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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	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 2000 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.

Comtribution Connector	Diel Menegement Messures	
Contributing Scenarios	Risk Management Measures	
General exposures (closed sy	vs- No other specific measures identified.	
tems)PROC1PROC2PROC3		
General exposures (open systems)PROC4	No other specific measures identified.	
Bulk transfersPROC8b	No other specific measures identified.	
Filling/ preparation of equipm	ent No other specific measures identified.	
from drums or contain-		
ers.PROC8bPROC5PROC9		
Process samplingPROC8b	No other specific measures identified.	
Metal machining operationsPROC17	No other specific measures identified.	
Treatment by dipping and pour	ır- No other specific measures identified.	
ingPROC13	·	

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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			
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	
Environmental factors not influenced by risk management			
Local freshwater dilution fact	or:	10	
Local marine water dilution f		100	
Other Operational Conditions 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 measures at process level (source) to prevent release			
Common practices vary acro	ss sites thus conservative process re-		
Technical onsite conditions and measures to reduce or limit discharges, air emis			
sions and releases to soil			
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 3.1 - 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
Cootion 4.4 Hoolth	

#### 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** 

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 RIS	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 a good basis atomically of assumptional business is implemented		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Managen	nent Measures	
General exposures (closed sy tems)PROC1PROC2PROC3	S-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipme or contain- ers.PROC5PROC8aPROC8b		No other specific measures identified.	
Process samplingDedicated fa	acilityPROC8b	No other specific measures identified.	
Metal machining operationsPF	ROC17	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).	k
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).	t

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		more than 4 hours , or:	ties involving exposure for rming to EN140 with Type
Treatment by dipping and por	uringPROC13	No other specific measu	res identified.
Equipment cleaning and maintenance-PROC8aPROC8b		Drain down system prior maintenance.	r to equipment opening or
Storage.PROC1PROC2		Store substance within a	a closed system.
Section 2.2	Control of En	vironmental Exposure	
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			<del>'</del>
Fraction of EU tonnage used	in region:		0,1
Regional use tonnage (tonne			5,0
Fraction of Regional tonnage			5,0E-04
Annual site tonnage (tonnes/			2,5E-03
Maximum daily site tonnage (			6,8E-03
Frequency and Duration of			
Continuous release.			
Emission Days (days/year):			365
<b>Environmental factors not i</b>	nfluenced by r	isk management	
Local freshwater dilution factor: 10		10	
Local marine water dilution factor:			100
<b>Other Operational Conditio</b>	ns affecting En	vironmental Exposure	
Release fraction to air from w			5,0E-02
Release fraction to wastewater from wide dispersive use: 2,5E-02		2,5E-02	
Release fraction to soil from wide dispersive use (regional only): 0		_	
Technical conditions and m			event release
Common practices vary acros	ss sites thus cor	nservative process re-	
lease estimates used.			
Technical onsite conditions	and measures	s 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 the required removal efficiency of >= (%)		U	
the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary  0		0	
wastewater treatment required.			
Organisational measures to		release from site	
Do not apply industrial sludge			
Sludge should be incinerated			
Conditions and Measures r	elated to munic	cipal sewage treatment p	lant
Estimated substance remova			93,6

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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 ha	s 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 AA Haalth	

#### 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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30000000790			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Use as binders and release agents- Industrial		
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 7, PROC 8b, PROC 10, PROC 13, PROC 14 Environmental Release Categories: ERC4, ESVOC SpERC 4.10a.v1		
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), and handling of waste.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 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 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 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 o to 15 air changes per hour). Avoid carrying out activities involving 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	r:	100
Other Operational Conditions	affecting Environmental Exposure	
Release fraction to air from proce	ess (initial release prior to RMM):	1,0
Release fraction to wastewater from process (initial release prior to 3,0E-06		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		
Prevent discharge of undissolved substance to or recover from onsite wastewater.		
	d	
No wastewater treatment require Treat air emission to provide a ty		80
	receiving water discharge) to provide	0
the required removal efficiency o		
If discharging to domestic sewag		0
wastewater treatment required.	5 a saumont plant, no socondary	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
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	
Canditions and Massures related to sytemal treatment of wests for	u diamanal	

#### 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	een 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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Expedite Contains Trenter	
30000000791	
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 Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless stated differently). lard of occupational hygiene is implemented.	

Contributing Sconarios   Dick Management Measures			
	Risk Management Measures		
Bulk transfersUse in contained			
systemsPROC1PROC2PROC	3		
Drum/batch transfer-	No other specific measures identified.		
sPROC8aPROC8b	·		
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	at cur.		
elevated temperature (> 20°C			
above ambient tempera-			
ture).PROC6			
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
	Detter.	
SprayingManualPROC11	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	•
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	eaion:	0,1
Regional use tonnage (tonnes/ye		30
Fraction of Regional tonnage use		5,0E-04
Annual site tonnage (tonnes/year		1,5E-02
Maximum daily site tonnage (kg/		4,1E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influ	uenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	affecting Environmental Exposure	
Release fraction to air from wide	1 1	9,5E-01
Release fraction to wastewater fr		2,5E-02
Release fraction to soil from wide		2,5E-02
	sures at process level (source) to pro-	event release
	ites thus conservative process re-	
lease estimates used.	d management and dealers on limit disale	
sions and releases to soil	d measures to reduce or limit disch	arges, air emis-
Risk from environmental exposur	ro is driven by freebyeater	
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 pr	event/limit release from site	
Do not apply industrial sludge to		
Sludge should be incinerated, co	ntained or reclaimed.	
<b>Conditions and Measures relat</b>	ed to municipal sewage treatment p	lant
	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 Massaures related to systemal treatment of wests 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 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
	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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30000000792	
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 Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of		
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
Assumes use at not more that	in 20°C above ambient temperature (unless stated differently).	
Assumes a good basic stand	ard 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	No other specific measures identified.	
via trigger sprays, dipping, etc.PROC13		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	

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Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB	•		
	•		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	·	0,1	
Regional use tonnage (tonne		610	
Fraction of Regional tonnage		2,0E-03	
Annual site tonnage (tonnes/		1,2	
Maximum daily site tonnage		3,4	
Frequency and Duration of	Use	1	
Continuous release.			
Emission Days (days/year):		365	
	influenced by risk management		
Local freshwater dilution fact		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	
Technical conditions and n	neasures at process level (source) to pr	event release	
Common practices vary across sites thus conservative process re-			
lease estimates used.	•		
Technical onsite conditions	s and measures to reduce or limit disch	arges, air emis-	
sions and releases to soil		_	
Risk from environmental exp	osure is driven by soil.		
No wastewater treatment req			
Treat air emission to provide	a typical removal efficiency of (%)	0	
	or to receiving water discharge) to provide	0	
the required removal efficience	3 7 1		
	wage treatment plant, no secondary	0	
wastewater treatment require			
	prevent/limit release from site		
Do not apply industrial sludge			
Sludge should be incinerated			
Conditions and Measures r	elated to municipal sewage treatment p	lant	
	Il from wastewater via domestic sewage	93,6	
treatment (%)			
	om wastewater after onsite and offsite	93,6	
(domestic treatment plant) R			
	age (MSafe) based on release following	4,7E+03	
total wastewater treatment re			
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03	
	elated 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 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	<b>EXPOSURE ESTIMATION</b>
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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## **ShellSol A100 Low Cumene**

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Exposure Scenario - Worker		
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 Sub-	Covers use of substance/product up to 1	00% (unless stated
stance in Mixture/Article	differently).,	•
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
Assumes use at not more that	n 20°C above ambient temperature (unles	
Assumes a good basic stand	ard of occupational hygiene is implemented	d.
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		<u>I</u>
Fraction of EU tonnage used in region: 0,1		0.4
Fraction of EU tonnage used	in region:	0,1

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	1
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	15
Maximum daily site tonnage (kg/day):	750
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	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05
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.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	95
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 treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,5E+06
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	
Combustion emissions limited by required exhaust emission controls.	•
Waste combustion emissions considered in regional exposure assessm	ent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

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

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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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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 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	
	an 20°C above ambient temperature (unless	• /

Contributing Scenarios	Ris	sk Management Measures	
Bulk transfersDedicated facilityPROC8b	-	No other specific measures identified.	
Drum/batch transfersDedicate facilityPROC8b	ed	No other specific measures identified.	
Refueling.Dedicated facili- tyPROC8b		No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PRO	СЗ	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		

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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	
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
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 sions and releases to soil	arges, air emis-
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	53
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	
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessment	nent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

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 - Worker** 

2000000000000		
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 Condition	ons affecting Exposure
	an 20°C above ambient temperature (unless stated differently). lard of occupational hygiene is implemented.

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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clesPROC9		
Equipment maintenance- PROC8a	Drain down system prior to equipme nance.	nt opening or mainte-
Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2 Co	entrol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in re	agion:	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
		2,16-02
Frequency and Duration of Use		
Continuous release.		365
Emission Days (days/year):	anned by riels management	300
Environmental factors not influ	enced by risk management	140
Local freshwater dilution factor:		10
Local marine water dilution factor		100
Other Operational Conditions a	ffecting Environmental Exposure	F 0F 00
Release fraction to air from wide dispersive use (regional only):		5,0E-02
Release fraction to wastewater from wide dispersive use:  Release fraction to soil from wide dispersive use (regional only):		2,5E-02
		2,5E-02
	ures at process level (source) to pr	event release
Common practices vary across si	tes thus conservative process re-	
lease estimates used.	d magazinas ta radizas ar limit disab	organ air amia
sions and releases to soil	d measures to reduce or limit disch	arges, air einis-
	o io drivon by froshwater	
Risk from environmental exposure		
No wastewater treatment required		0
Treat air emission to provide a type	receiving water discharge) to provide	0
the required removal efficiency of		U
If discharging to domestic sewage		0
wastewater treatment required.	e treatment plant, no secondary	U
Organisational measures to pre	went/limit release from site	
Do not apply industrial sludge to r		
Sludge should be incinerated, cor		
Sidage silodia de inclineratea, coi	italiled of recialilled.	
<b>Conditions and Measures relate</b>	ed to municipal sewage treatment p	lant
	m wastewater via domestic sewage	93,6
treatment (%)		
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 remov		
Assumed domestic sewage treatr		2,0E+03
Conditions and Measures relate	ed to external treatment of waste fo	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

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

#### 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
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	
	in 20°C above ambient temperature (unless stated differently).
Assumes a good basic stands	ard of occupational hygiene is implemented.
	, , , , , , , , , , , , , , , , , , , ,
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	No other specific measures identified.
equipment from drums or	·
containers.Non-dedicated	
facilityPROC8a	
General exposures (closed	No other specific measures identified.
systems)PROC2	
General exposures (open	No other specific measures identified.
systems)PROC4	
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	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		15
Fraction of Regional tonnage		0,67
Annual site tonnage (tonnes/		10
Maximum daily site tonnage		500
Frequency and Duration of		000
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	20
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	100
		Γ 0Γ 02
	rocess (initial release prior to RMM):	5,0E-03
RMM):	er from process (initial release prior to	3,0E-05
	process (initial release prior to RMM):	1,0E-03
	neasures at process level (source) to pr	event release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-
Risk from environmental exp	osure is driven by freshwater.	
	lived substance to or recover from onsite	
wastewater.		
No wastewater treatment req	uired.	
Treat air emission to provide	a typical removal efficiency of (%)	0
	or to receiving water discharge) to provide	0
the required removal efficiend		
	wage treatment plant, no secondary	0
wastewater treatment require		
	prevent/limit release from site	1
Do not apply industrial sludge		
Sludge should be incinerated		
	elated to municipal sewage treatment p	
	Il from wastewater via domestic sewage	93,6
treatment (%)		
	om wastewater after onsite and offsite	93,6
		<u> </u>
(domestic treatment plant) R	and the contract of the contra	8,3E+05
Maximum allowable site tonn		0,32+03
Maximum allowable site tonn total wastewater treatment re	moval (kg/d)	,
Maximum allowable site tonn total wastewater treatment re Assumed domestic sewage t	moval (kg/d)	2,0E+03

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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	
30000000802	
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	
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	
	an 20°C above ambient temperature (unless stated differently).
	ard of occupational hygiene is implemented.
	, , , , ,
Contributing Scenarios	Risk Management Measures
Drum/batch transfersNon-	No other specific measures identified.
dedicated facilityPROC8a	
Drum/batch transfersDedi-	No other specific measures identified.
cated facilityPROC8b	
Drum/batch transfersDedi-	Ensure operation is undertaken outdoors.
cated facilityOperation is	Avoid carrying out activities involving exposure for more than
carried out at elevated tem-	4 hours
perature (> 20°C above	
ambient tempera-	
ture).PROC8b	
ManualRolling, Brush-	Ensure operation is undertaken outdoors.
ingPROC10	
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.
chine applicationOperation	Wear a respirator conforming to EN140 with Type A filter or
is carried out at elevated	better.
temperature (> 20°C above	Limit the substance content in the mixture to 50 %.
ambient tempera-	
ture).PROC11	Engure energian is undertaken autdeare
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.

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chine applicationPROC11	Wear a respirator conforming to EN140 v better.	vith Type A filter or
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
Maximum daily site tonnage		3,0E-02
Frequency and Duration of		0,02 02
Continuous release.		
Emission Days (days/year):		365
	influenced by risk management	1 000
Local freshwater dilution fact		10
Local marine water dilution factor:		100
	ons affecting Environmental Exposure	100
	vide dispersive use (regional only):	9,5E-01
Release fraction to wastewat		1,0E-02
	wide dispersive use (regional only):	4,0E-02
	neasures at process level (source) to pro	
	ss sites thus conservative process re-	
lease estimates used.	oo onoo araa oonoorraara process re	
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		<b>,</b>
Risk from environmental exp	osure is driven by freshwater.	
No wastewater treatment rec	uired.	
	a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide		0
the required removal efficiency of >= (%)		
	wage treatment plant, no secondary	0
wastewater treatment require		
	o prevent/limit release from site	
Do not apply industrial sludge Sludge should be incinerated		
Conditions and Measures	related to municipal sewage treatment p	lant
	al from wastewater via domestic sewage	93,6
treatment (%)	Hadiomator ha domodio dowage	33,3
	om wastewater after onsite and offsite	93,6
(domestic treatment plant) R		<b>'</b>

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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 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.

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

## **ShellSol A100 Low Cumene**

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Exposure occitatio Worker	
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 (tonne	s/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 factor: 10		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 dischasions and releases to soil	arges, air emis-
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 treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3,1E+03
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	•
regulations.	J.
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional
rogulations.	

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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#### **ShellSol A100 Low Cumene**

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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.

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

## **ShellSol A100 Low Cumene**

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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	27 '	
	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	b	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonne	es/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		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 factor: 100		100

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Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	5,0E-01
Release fraction to wastewater from wide dispersive use:	5,0E-01
Release fraction to wastewater from wide dispersive use.  Release fraction to soil from wide dispersive use (regional only):	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	arnes air emis-
sions and releases to soil	arges, an enns-
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	1
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	6,8
total wastewater treatment removal (kg/d)	0,0
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	
regulations.	local and/or regiona
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	<b>-</b> - <b>-</b>
•	

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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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 Conditio	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 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			
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	<u> </u>		
Continuous release.	222		
Emission Days (days/year):	300		
Environmental factors not influenced by risk management	T 40		
Local freshwater dilution factor:	10		
Local marine water dilution factor:	100		
Other Operational Conditions affecting Environmental Exposure	T		
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 discha	arges, air emis-		
sions and releases to soil			
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 >= (%)			
If discharging to domestic sewage treatment plant, no secondary	34,9		
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	95,8		
(domestic treatment plant) RMMs (%)	,		
Maximum allowable site tonnage (MSafe) based on release following	100		
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			
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.	and or regiona		
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SECTION 3	EXPOSURE ESTIMATION

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#### Section 3.1 - Health

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

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

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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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 RISK MANAGEMENT MEASURES			
Section 2.1	Control of Worker Exposure			
Product Characteristics				
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP			
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated			
stance in Mixture/Article	differently).,			
Frequency and Duration of	Use			
	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			
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		0,1		
Regional use tonnage (tonnes/year):		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	1
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	1
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
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.	-
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	Ŭ
•	

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 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	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
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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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
<b>Environmental factors not</b>	influenced by risk management	
Local freshwater dilution factor: 10		10
Local marine water dilution factor:		100
	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 removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		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 S	TP
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	Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event): 2		2
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
	Covers exposure up to 0,03 hours/event
Fuels Liquid, Garden	Covers concentrations up to 100 %
Equipment - Use.	Covers contectitiations up to 100 /0
	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	Covers concentrations up to 100 %
Equipment - Refuelling.	Covers contectitiations up to 100 /0
Equipment Relating.	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 ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid: Home space	Covers concentrations up to 100 %
heater fuel.	
	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
	1 Covers exposure up to 0,01 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 (tonnes/	year):	210
Fraction of Regional tonnage u	sed 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 plant		
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 contame a management of the section of 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	

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	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.	

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 AN MEASURES	D RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa a	t 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,		857,5
Frequency and Duration of 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 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
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		0,1	
Regional use tonnage (tonne	s/year):	20	
Fraction of Regional tonnage	used locally:	2,0E-03	
Annual site tonnage (tonnes/		4,0E-02	
Maximum daily site tonnage (		0,11	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	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 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	
Conditions and Measures related to municipal sewage treatment plant			
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93,6	
	age (MSafe) based on release following moval (kg/d)	227	
Assumed domestic sewage to	reatment 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

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

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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** 

Exposure Container	
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 RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure > 10 kPa a	t STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 10	0 %
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 o	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event):		6
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	
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).	
<u> </u>	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 (tonnes		12
Fraction of Regional tonnage		5,0E-04
Annual site tonnage (tonnes/)		5,8E-03
Maximum daily site tonnage (		1,6E-02
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor	•	10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
	ide dispersive use (regional only):	1,5E-01
Release fraction to wastewater from wide dispersive use:		5,0E-02
Release fraction to soil from wide dispersive use (regional only):		5,0E-02
	elated to municipal sewage treatment ہ	olant
Estimated substance removal from wastewater via domestic sewage		93,6
treatment (%)		
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		40
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** 

200000001110	
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 AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure > 10 kPa a	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 10	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	f Use	
Unless stated otherwise.		
covers use up to (times/day	of use):	1
Exposure (hours/event):		6
<b>Other Operational Conditi</b>	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	
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 (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 i	nfluenced 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 re	elated to municipal sewage treatment p	plant
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93,6
	age (MSafe) based on release following moval (kg/d)	41
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** 

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 10	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	mount up to (g):	13.800
covers skin contact area (cm	n2):	857,50
Frequency and Duration o	f 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 temperatures.		
Covers use in room size of 20m3		
Covers use under typical ho	usehold ventilation.	

OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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	Covers concentrations up to 50 %
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
Air care products Air care,	Covers exposure up to 0,25 hours/event Covers concentrations up to 10 %
continuous action (solid and liquid).	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,70 cm2
	For each use event, covers amount up to 0,48 g
	Covers use 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).	
Offig).	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.	эр н то л
	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
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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 factor:		10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only): 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
Estimated substance removal 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
	elated to external treatment of waste for	•
External treatment and disposal of waste should comply with applicable local and/or region-		e local and/or region-
al regulations.		
Conditions and measures	elated to external recovery of waste	
Conditions and measures i	ciatod to external recovery or 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** 

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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	S AND RISK MANAGEMENT
Section 2.1	Control of Consumer Expos	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):		1
Exposure (hours/event):		6
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.	-	
Covers use at ambient temperatures		

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).	
giae, weed parquet giae).	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
Adhasiyas asalanta Clus	Covers exposure up to 6,00 hours/event  Covers concentrations up to 30 %
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	covers use up to 6 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
A !!	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
	Covers exposure up to 0,50 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %
	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use 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).	
	covers use up to 128 day/year
	covers use up to 128 day/year covers use up to 1 times/day of use
	covers use up to 1 times/day of use
	covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,00 cm2
	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 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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nore point removers We	T
ners, paint removers Waterborne latex wall paint.	
terborne latex wall paint.	covers use up to 4 day/year
	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 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
Coatings and paints, thin- ners, paint removers Aero-	Covers concentrations up to 50 %
sol 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.

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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 Domewore	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
	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, finish-	Covers concentrations up to 50 %
ing, impregnation and care	'
products 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 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, finish-	Covers concentrations up to 50 %
ing, impregnation and care	Covers concentrations up to 50 %
products Polishes, spray	
(furniture, shoes).	
(lullillule, Silves).	covers use up to 9 day/year
	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, 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 ventila-
	tion.
	Covers use in room size of 34 m3
	Covers use in room size of 34 m3  Covers exposure up to 0,17 hours/event

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Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	Oovers 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
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, wax / cream (floor, furniture, shoes).	Service services in an end ap to service
	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,	Covers concentrations up to 50 %
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 impregnating products; including bleaches and other processing aids	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 115 g
	, ,
	Covers use under typical household ventilation.
	Covers use under typical nousehold ventilation.  Covers use in room size of 20m3

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

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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	e 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	

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.	

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.