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

#### 1.1 Product identifier

Trade name : ShellSol A150

Product code : Q7493

Registration number EU : 01-2119463588-24-0002

Synonyms : Hydrocarbons, C10, aromatics, >1% naphthalene

EC-No. : 919-284-0

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)

Instituto Nacional de Toxicologia: +34 91 562 04 20

+44 (0) 1235 239 670 (Este número de teléfono esta disponibles las 24 horas del día, 7

días de la semana)

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)

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

ways.

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Specific target organ toxicity - single exposure, Category 3, Narcotic effects

H336: May cause drowsiness or dizziness.

Carcinogenicity, Category 2

H351: Suspected of causing cancer.

Long-term (chronic) aquatic hazard, Cat-

egory 2

H411: Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements EUH066: Repeated exposure may cause skin dry-

ness or cracking.

#### 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :







Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

Not classified as a physical hazard according to CLP

criteria.

**HEALTH HAZARDS:** 

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.H351 Suspected of causing cancer.

**ENVIRONMENTAL HAZARDS:** 

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066 cracking.

Repeated exposure may cause skin dryness or

Precautionary statements : Prevention:

P201 Obtain special instructions before use.

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

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

P308 + P313 IF exposed or concerned: Get medical advice/

attention.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste

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.

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

#### 3.1 Substances

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
	EC-No.	, ,
Hydrocarbons, C10, aro-	Not Assigned	< 100
matics, >1% naphthalene	919-284-0	

#### **Further information**

#### Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Naphthalene	91-20-3, 202-049-5	Acute Tox.4; H302 Carc.2; H351 Aquatic Acute1; H400 Aquatic Chronic1; H410	0 - 10
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 - 0,01

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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. Flush exposed area with wa-

> ter and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

In case of eye contact Flush eye with copious quantities of water.

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

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** 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.

No specific hazards under normal use conditions.

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

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

#### 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).

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

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#### **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 bonding and grounding (earthing) all equipment.

Monitor area with combustible gas indicator.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up

For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

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

Ventilate contaminated area thoroughly.

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> If contamination of site occurs remediation may require specialist advice.

#### 6.4 Reference to other sections

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

#### **SECTION 7: Handling and storage**

### 7.1 Precautions for safe handling

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

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

Section 8 of this Safety Data Sheet.

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

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

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

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

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

distant ignition is possible.

**Product Transfer** Even with proper grounding and bonding, this material can still

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

Refer to guidance under Handling section.

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Hygiene measures Wash hands before eating, drinking, smoking and using the

> toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

#### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Further information on stor-

age stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

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

reduce the risk.

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

ble.

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

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

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

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

near containers.

7.3 Specific end use(s)

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

tered uses under REACH.

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

on Static Electricity).

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

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

### 8.1 Control parameters

### **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis		
Naphthalene	91-20-3	VLA-ED	10 ppm 53 mg/m3	ES VLA		
	Further info	Further information: Skin				
Naphthalene		VLA-EC	15 ppm 80 mg/m3	ES VLA		
	Further info	rmation: Skin				
Naphthalene		TWA	10 ppm 50 mg/m3	91/322/EEC		
	Further info	rmation: Indicative				
Cumene	98-82-8	VLA-ED	10 ppm 50 mg/m3	ES VLA		
	Further info	rmation: Skin				
Cumene		VLA-EC	50 ppm 250 mg/m3	ES VLA		
	Further info	rmation: Skin				
Cumene		TWA	10 ppm 50 mg/m3	2019/1831/E U		
			on assigned to the occupa of significant uptake thro			
Cumene		STEL	50 ppm 250 mg/m3	2019/1831/E U		
			on assigned to the occupa of significant uptake thro			
Benzene	71-43-2	VLA-ED	1 ppm 3,25 mg/m3	ES VLA		
	tations in hu		hat are suspected to indu Known human carcinoge			
Benzene		TWA	0,25 ppm 0,8 mg/m3	Shell Internal Standard (SIS) for 8-12 hour TWA.		
Benzene		STEL	2,5 ppm 8 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)		

### **Biological occupational exposure limits**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Cumene	98-82-8	2-phenyl-2-	End of workday	ES VLB
		propanol: 7 mg/g		

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		creatinine (Urine)		
Benzene	71-43-2	S- phenylmercapturic acid: 0.045 mg/g creatinine (Urine)	End of workday	ES VLB
		t,t-muconic acid: 2 mg/l (Urine)	End of workday	ES VLB

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Hydrocarbons, C10, aromatics, >1% naphthalene	Workers	Dermal	Long-term systemic effects	12,5 mg/kg bw/day
Hydrocarbons, C10, aromatics, >1% naphthalene	Workers	Inhalation	Long-term systemic effects	151 mg/m3
Hydrocarbons, C10, aromatics, >1% naphthalene	Consumers	Oral	Long-term systemic effects	7,5 mg/kg bw/day
Hydrocarbons, C10, aromatics, >1% naphthalene	Consumers	Inhalation	Long-term systemic effects	32 mg/m3
Hydrocarbons, C10, aromatics, >1% naphthalene	Consumers	Dermal	Long-term systemic effects	7,5 mg/kg bw/day
Naphthalene	Consumers	Oral	Long-term systemic effects	4,23 mg/kg
Benzene	Workers	Inhalation	Long-term systemic effects	0,8 mg/m3/ 8h

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

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

### 8.2 Exposure controls

### **Engineering measures**

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

#### General Information:

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

Define procedures for safe handling and maintenance of controls.

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

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

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

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

#### Personal protective equipment

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

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

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

protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

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

gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: butyl-

rubber Nitrile rubber gloves.

Incidental contact/Splash protection: Nitrile rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key

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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 moisturing is recommended.

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.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Stand-

ard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

Wear antistatic and flame-retardant clothing, if a local risk

assessment deems it so.

Respiratory protection

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

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

priate combination of mask and filter.

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

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

#### **SECTION 9: Physical and chemical properties**

#### 9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : aromatic

Odour Threshold : Data not available

pour point : < 20 °C

Melting point/freezing point Data not available

Boiling point/boiling range : 179 - 214 °C

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Flammability

Flammability (solid, gas) : Data not available

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 : Typical 62 - 65,6 °C

Method: ASTM D-93 / PMCC

Auto-ignition temperature : 449 - 510 °C

Method: ASTM E-659

Decomposition temperature

Decomposition tempera-

ture

Not applicable

pH : Not applicable

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : Typical 1,2 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

Data not available

Vapour pressure : 0,09 kPa (20 °C)

Relative density : 0,88 - 0,91 (20 °C)

Method: ASTM D4052

Density : Typical 893 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4,8

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

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Oxidizing properties : Data not available

Evaporation rate : 1,0

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 conductivity is below 400 p.S./m and is considered nominated acmi-

ductivity is below 100 pS/m and is considered semi-

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

can greatly influence the conductivity of a liquid

Surface tension : Data not available

Molecular weight : Data not available

### **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.

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### **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, C10, aromatics, >1% naphthalene:

Acute oral toxicity : LD50 (Rat): > 5000 mg/kg

Remarks: Low toxicity

Acute inhalation toxicity : LC50 (Rat): > 2 - 20 mg/l

Remarks: Low toxicity if inhaled.

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

Acute dermal toxicity : LD50 (Rabbit): > 2000 mg/kg

Remarks: Low toxicity

#### Skin corrosion/irritation

#### **Components:**

### Hydrocarbons, C10, aromatics, >1% naphthalene:

Remarks : Not irritating to skin.

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

### Serious eye damage/eye irritation

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

Remarks : Not irritating to eye.

### Respiratory or skin sensitisation

#### Components:

### Hydrocarbons, C10, aromatics, >1% naphthalene:

Remarks : Not a sensitiser.

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

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### Germ cell mutagenicity

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

Genotoxicity in vivo : Remarks: Not mutagenic.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

#### Carcinogenicity

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

Remarks : Limited evidence of carcinogenic effect

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Hydrocarbons, C10, aromatics, >1% naphthalene	Carcinogenicity Category 2
Naphthalene	Carcinogenicity Category 2
Cumene	Carcinogenicity Category 1B
Benzene	Carcinogenicity Category 1A

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

### Reproductive toxicity

#### Components:

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

Effects on fertility

Remarks: Causes foetotoxicity in animals at doses which are maternally toxic., Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not

impair fertility.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

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#### STOT - single exposure

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

Remarks : May cause drowsiness and dizziness.

High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea.

#### STOT - repeated exposure

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

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

sidered relevant to humans

#### **Aspiration toxicity**

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

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, C10, aromatics, >1% naphthalene:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

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### **SECTION 12: Ecological information**

### 12.1 Toxicity

### **Components:**

### Hydrocarbons, C10, aromatics, >1% naphthalene:

Toxicity to fish Remarks: LC/EC/IC50 >1 - <=10 mg/l

Toxic

aquatic invertebrates

Toxicity to daphnia and other : Remarks: LC/EC/IC50 >1 - <=10 mg/l

Toxic

Toxicity to algae/aquatic plants : Remarks: LC/EC/IC50 >1 - <=10 mg/l

Toxic

Toxicity to microorganisms

Remarks: Data not available

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, C10, aromatics, >1% naphthalene:

Biodegradability Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

### 12.3 Bioaccumulative potential

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

#### 12.4 Mobility in soil

#### **Components:**

### Hydrocarbons, C10, aromatics, >1% naphthalene:

: Remarks: Floats on water. Mobility

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#### 12.5 Results of PBT and vPvB assessment

#### **Components:**

#### Hydrocarbons, C10, aromatics, >1% naphthalene:

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, C10, aromatics, >1% naphthalene:

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

courses.

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

contamination.

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

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Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

tional requirements and must be complied with.

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

nical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.

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

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

### **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADR : 3082 RID : 3082 IMDG : 3082 IATA : 3082

#### 14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

IATA : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

#### 14.3 Transport hazard class(es)

 ADR
 : 9

 RID
 : 9

 IMDG
 : 9

 IATA
 : 9

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### 14.4 Packing group

**ADR** 

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

**IMDG** 

Packing group : III Labels : 9

**IATA** 

Packing group : III Labels : 9

#### 14.5 Environmental hazards

**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 - List of substances subject to authorisation

(Annex XIV)

: Product is not subject to Authorisa-

tion under REACH.

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).

### Other regulations:

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

Product is subject to El Real Decreto 840/2015, measures to control the risks inherent in serious accidents involving hazardous substances based on Seveso III directive (2012/18/EU).

The national inventory is based on the CAS number 64742-94-5.

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

DSL : Listed

IECSC : Listed

KECI : Listed

PICCS : Listed

TSCA : Listed

ENCS : Listed

NZIoC : Listed

TCSI : Listed

#### 15.2 Chemical safety assessment

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

#### **SECTION 16: Other information**

#### Full text of other abbreviations

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

fifth list of indicative occupational exposure limit values

91/322/EEC : Europe. Commission Directive 91/322/EEC on establishing

indicative limit values

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ES VLA : Spain. Environmental Limits for exposure to Chemical agents

- Table 1: Occupational Exposure Values

ES VLB : Occupational Exposure Limits for Chemical Agents in Spain -

Biological Exposure Values

2019/1831/EU / TWA : Limit Value - eight hours 2019/1831/EU / STEL : Short term exposure limit 91/322/EEC / TWA : Limit Value - eight hours

ES VLA / VLA-ED : Environmental Daily Limit Value ES VLA / VLA-EC : Environmental Short Term Value

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.

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

ered to be PBT or vPvB.

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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

: Use in laboratories

- Professional

**Uses - Worker** 

Title : Use in laboratories

- Industrial

**Uses - Worker** 

Title : Road and construction applications

- Professional

**Uses - Worker** 

Title : Functional Fluids

- Professional

**Uses - Worker** 

Title : Functional Fluids

- Industrial

**Uses - Worker** 

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Title : Use as a fuel

- Professional

**Uses - Worker** 

Title : Use as a fuel

- Industrial

**Uses - Worker** 

Title : Use in Agrochemicals uses

- Professional

**Uses - Worker** 

Title : Use as binders and release agents

- Professional

**Uses - Worker** 

Title : Use as binders and release agents

- Industrial

**Uses - Worker** 

Title : Metal working fluids / rolling oils

- Professional

**Uses - Worker** 

Title : Metal working fluids / rolling oils

- Industrial

**Uses - Worker** 

Title : Lubricants

- Professional

High Environmental Release

**Uses - Worker** 

Title : Lubricants

- Professional

Low Environmental Release

Uses - Worker

Title : Lubricants

- Industrial

**Uses - Worker** 

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

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- Industrial

**Uses - Worker** 

Title : Use in Cleaning Agents

- Professional

**Uses - Worker** 

Title : Use in Cleaning Agents

- Industrial

**Uses - Worker** 

Title : Uses in Coatings

- Professional

**Uses - Worker** 

Title : Uses in Coatings

- Industrial

**Uses - Worker** 

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

- Industrial

**Uses - Worker** 

Title : Manufacture of substance

- Industrial

**Uses - Worker** 

Title : Distribution of substance

- Industrial

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

- Consumer

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**Uses - Consumer** 

Title : Use as a fuel

- Consumer

**Uses - Consumer** 

Title : Use in Agrochemicals uses

- Consumer

**Uses - Consumer** 

Title : Lubricants

- Consumer

High Environmental Release

**Uses - Consumer** 

Title : Lubricants

Consumer

Low Environmental Release

**Uses - Consumer** 

Title : Use in Cleaning Agents

- Consumer

**Uses - Consumer** 

Title : Uses in Coatings

- Consumer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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**Exposure Scenario - Worker** 

Exposure oceriario - W	OTRC!
30000000780	
OFOTION 4	EVECULES COSMADIO TITLS
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
	ореко оли.
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND MEASURES	RISK MANAGEMENT	
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 Sub-	Covers use of substance/product up to	o 100% (unless stated	
stance in Mixture/Article	differently).,		
Frequency and Duration of			
	8 hours (unless stated differently).		
Other Operational Condition		1 ( ) 1 1100 (1 )	
	an 20°C above ambient temperature (ur ard of occupational hygiene is impleme		
Contributing Scenarios	Risk Management Measures		
Laboratory activitiesPROC15	No other specific measures identified.		
CleaningPROC10	No other specific measures identified.		
Section 2.2	Control of Environmental Exposure	)	
Substance is complex UVCB			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	0,6	
		5,0E-04	
Annual site tonnage (tonnes/year): 3,0E-04		3,0E-04	
Maximum daily site tonnage (kg/day): 8,2E-04		8,2E-04	
Frequency and Duration of			
Continuous release.			
Emission Days (days/year): 365		365	
<b>Environmental factors not</b>	influenced by risk management		
Local freshwater dilution fact	or:	10	
Local marine water dilution factor: 100			
Other Operational Condition	ns affecting Environmental Exposure		

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Release fraction to air from process (initial release prior to RMM):	0,5			
Release fraction to wastewater from process (initial release prior to RMM):	0,5			
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	<b>3</b> • • , • • • •			
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 >= (%)	0			
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 (%)	94,6			
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6			
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,1E-01			
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 regulations.	local and/or regional			
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.

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.

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

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**Exposure Scenario - Worker** 

Exposure occinario 11	Exposure deciratio - Worker	
30000000779		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in laboratories- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC2, ERC4	
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.	

SECTION 2	OPERATIONAL CONDITIONS AND R MEASURES	RISK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to differently).,	100% (unless stated
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		<u> </u>
	an 20°C above ambient temperature (unle lard of occupational hygiene is implemen	
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 UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		0,1
Regional use tonnage (tonne	es/year):	0,6
Fraction of Regional tonnage	e used locally:	1
Annual site tonnage (tonnes	/year):	0,6
Maximum daily site tonnage (kg/day):		30
Frequency and Duration of Use		
Continuous release.		
		20
<b>Environmental factors not</b>	influenced by risk management	
Local freshwater dilution factor: 10		10
Local marine water dilution factor: 100		100
Other Operational Conditions affecting Environmental Exposure		
	process (initial release prior to RMM):	2,5E-02

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Release fraction to wastewater from process (initial release prior to	2,0E-02
RMM):	4.05.04
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 (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,3E+03
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 regulations.	local and/or regional
1	

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** 

Aposure oceriario - Worker	
30000000789	
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	Use
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-	No other specific measures identified.
ingPROC10	
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.
chine applicationOperation	Limit the substance content in the mixture to 50 %.
is carried out at elevated	Wear a respirator conforming to EN140 with Type A filter or
temperature (> 20°C above	better.
ambient tempera-	Automate activity where possible.
ture).PROC11	Francisco approaching to condendate a state and
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.		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.		
Drum and small package fillingPROC9	No other specific measures identified.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB			
Predominantly hydrophobic.			
Amounts Used		l.	
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne		12	
Fraction of Regional tonnage		5,0E-04	
Annual site tonnage (tonnes/		6,1E-03	
Maximum daily site tonnage		1,7E-02	
Frequency and Duration of		,·	
Continuous release.			
Emission Days (days/year):		365	
	influenced by risk management	1 000	
Local freshwater dilution factor		10	
Local marine water dilution fa		100	
	Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):		0,95	
Release fraction to wastewater from process (initial release prior to		1,0E-02	
RMM):			
	process (initial release prior to RMM):	4,0E-02	
Release fraction to soil from process (initial release prior to RMM): 4,0E-02  Technical conditions and measures at process level (source) to prevent release			
	ss sites thus conservative process re-		
lease estimates used.			
	s and measures to reduce or limit discha	arges, air emis-	
sions and releases to soil		<b>J</b> ,	
Risk from environmental expe	osure is driven by freshwater.		
No wastewater treatment req			
Treat air emission to provide a typical removal efficiency of (%) 0		0	
Treat onsite wastewater (prior to receiving water discharge) to provide 0		0	
the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, no secondary 0		0	
wastewater treatment required.			
Organisational measures to	prevent/limit release from site		
Do not apply industrial sludge			
Sludge should be incinerated	, contained or reclaimed.		
Conditions and Measures r	elated to municipal sewage treatment p	lant	
	I from wastewater via domestic sewage	94,6	
treatment (%)			
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)		94,6	
	age (MSafe) based on release following	4,6	
ויוטאווויטווו מווטשמטוב אונב נטוווו	ago (modio) basca on release following	_ <del>-</del> ,0	

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total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	4,3E+00

#### 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** 

30000000778	
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
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

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 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	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.			

7.534mes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Ris	sk Management Measures
Drum/batch transfersPROC8a	No other specific measures identified.
Transfer from/pouring from containersPROC9	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.PROC9	No other specific measures identified.
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
Operation of equipment containing engine oils and similar.(closed systems)PROC20	No other specific measures identified.
Operation of equipment containing engine oils and similar. (closed systems) Operation is carried out at elevated temperature (> 20°C above ambient temperature). PROC20	No other specific measures identified.
Remanufacture of reject arti-	No other specific measures identified.

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alooDDOC0	I	
clesPROC9	No other engelia maggures identifies	
Equipment maintenance- PROC8a	No other specific measures identified	
Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2 Co	ntrol of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in re	egion:	0,1
Regional use tonnage (tonnes/ye		3,0
Fraction of Regional tonnage use		5,0E-04
Annual site tonnage (tonnes/year		1,5E-03
Maximum daily site tonnage (kg/d		4,1E-03
Frequency and Duration of Use		,
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influ	enced by risk management	1 000
Local freshwater dilution factor:	choca by hox management	10
Local marine water dilution factor		100
	ffecting Environmental Exposure	100
Release fraction to air from proce		5,0E-02
	om process (initial release prior to	2,5E-02
RMM):	om process (miliar release prior to	2,02 02
Release fraction to soil from proc		2,5E-02
Technical conditions and meas	ures at process level (source) to pr	event release
Common practices vary across si	tes thus conservative process re-	
lease estimates used.	d management to made an an illustration by	
sions and releases to soil	d measures to reduce or limit disch	arges, air emis-
Risk from environmental exposur	e is driven by freshwater.	
No wastewater treatment required	d.	
Treat air emission to provide a type	pical removal efficiency of (%)	0
	receiving water discharge) to provide	0
the required removal efficiency of		
If discharging to domestic sewage	e treatment plant, no secondary	0
wastewater treatment required.		
Organisational measures to pro		
Do not apply industrial sludge to		
Sludge should be incinerated, con	ntained or reciaimed.	
Conditions and Measures relate	ed to municipal sewage treatment p	lant
	m wastewater via domestic sewage	94,6
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite		94,6
(domestic treatment plant) RMMs		
Maximum allowable site tonnage	1,1	
total wastewater treatment remov		
Assumed domestic sewage treatr		2,0E+03
	ed to external treatment of waste for	
External treatment and disposal of	of waste should comply with applicable	local and/or regional

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regulations.

#### Conditions and measures related to external recovery of waste

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

SECTION 3	<b>EXPOSURE ESTIMATION</b>
3EC11014 3	LAI OSONE 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 Scenario - Worker** 

Exposure oceriano - Worker		
30000000777		
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
SECTION 2	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	ns affecting Exposure
Assumes use at not more that	n 20°C above ambient temperature (unless stated differently).
Assumes a good basic standa	ard of occupational hygiene is implemented.
	, , , , ,
Contributing Scenarios	Risk Management Measures
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Filling of arti-	No other specific measures identified.
cles/equipment(closed systems)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.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		3,0
Fraction of Regional tonnage	1	
Annual site tonnage (tonnes/		3,0
Maximum daily site tonnage		150
Frequency and Duration of		130
Continuous release.	USC	
Emission Days (days/year):		20
	influenced by rick management	20
	nfluenced by risk management	10
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	L - 0 - 00
	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
Technical conditions and n	neasures at process level (source) to pr	event release
Common practices vary acro-	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 expe	osure is driven by freshwater.	
Prevent discharge of undisso wastewater.	lved substance to or recover from onsite	
No wastewater treatment req	uired.	
	a typical removal efficiency of (%)	0
	r to receiving water discharge) to provide	0
the required removal efficiency		
	wage treatment plant, no secondary	0
wastewater treatment require		
	prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated		
	elated to municipal sewage treatment p	
treatment (%)	I from wastewater via domestic sewage	94,6
Total efficiency of removal fro (domestic treatment plant) RI	94,6	
Maximum allowable site tonn	age (MSafe) based on release following	3,8E+04
total wastewater treatment re	0.05.00	
Assumed domestic sewage t	2,0E+03	
	elated to external treatment of waste fo	
External treatment and dispo regulations.	sal of waste should comply with applicable	local and/or regiona

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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.

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**Exposure Scenario - Worker** 

Exposure decriano - Worker		
30000000776		
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 RISI 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 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to	Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

	Contributing Scenarios Ris		sk Management Measures	
	Bulk transfersDedicated facili-		No other specific measures identified.	
	tyPROC8b			
	Drum/batch transfersDedicate facilityPROC8b	ed	No other specific measures identified.	
	Refueling.Dedicated facili-		No other specific measures identified.	
	tyPROC8b			
	General exposures (closed		No other specific measures identified.	
	systems)PROC1PROC2PRO	C3		
	Use as a fuel(closed sys-		No other specific measures identified.	
	tems)PROC16			
	Equipment cleaning and		No other specific measures identified.	
	maintenancePROC8a			
	Storage.PROC1		Store substance within a closed system.	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1

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Regional use tonnage (tonnes/year):	0,12
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	6,2E-05
Maximum daily site tonnage (kg/day):	1,7E-04
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 process (initial release prior to RMM):	1,0E-04
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):	1,0E-05
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 discharge	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	94,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	4,4E-02
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
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	

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** 

Exposure oceriano - Worker	
30000000775	
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 MANAG MEASURES	EMENT
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 differently).,	s stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
Use as a fuel(closed systems)PROC16	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	<b>Control of Environmental Exposu</b>	re
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		
Regional use tonnage (tonnes/year): 2,5E+03		2,5E+03
Fraction of Regional tonnage	used locally:	1

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Annual site tonnage (tonnes/year):	2,5E+03
Maximum daily site tonnage (kg/day):	2,5E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	100
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 pro	event release
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-
sions and releases to soil	-
Risk from environmental exposure is driven by freshwater sediment.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	95
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
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 (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,7E+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	-
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.
This sabstance is sentential during doe and no waste of substance is g	J. 1314104.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has be indicated.	een 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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**Exposure Scenario - Worker** 

30000000774	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Agrochemicals uses- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of			
	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		
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 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.		
Ad hoc manual application via trigger sprays, dipping, etc.PROC13	No other specific measures identified.		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.		
Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			

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Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	870
Fraction of Regional tonnage used locally:	2,0E-03
Annual site tonnage (tonnes/year):	1,7
Maximum daily site tonnage (kg/day):	4,8
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 process (initial release prior to RMM):	0,9
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):	9,0E-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	J
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	
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	94,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	920
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	8,8E+02
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional	
regulations.	
Togulations.	

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SECTION 3	EXPOSURE ESTIMATION

#### Section 3.1 - Health

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

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

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

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

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

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

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

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**Exposure Scenario - Worker** 

Exposure occitatio Work	
30000000773	
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	o 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk Management Measures
Bulk transfersUse in contained systemsPROC1PROC2PROC	No other specific measures identified.
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 systems)Operation is carried out a elevated temperature (> 20°C above ambient temperature).PROC6	Provide extraction ventilation at points where emissions occur. , or: Wear a respirator conforming to EN140 with Type A filter or better.
SprayingMachinePROC1	Minimise exposure by extracted full enclosure for the operation or equipment.

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SprayingManualPROC11 Carry out in a vented booth or extract		ted enclosure.
	, or:	
	Wear a respirator conforming to EN1	40 with Type A filter or
	better.	
ManualRolling, Brush-	No other specific measures identified	
ingPROC10		
Storage.PROC1PROC2	Store substance within a closed syste	em.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	100
Fraction of Regional tonnage		5,0E-04
Annual site tonnage (tonnes/y	rear):	5,0E-02
Maximum daily site tonnage (	kg/day):	0,14
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor	r:	10
Local marine water dilution fa	ctor:	100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from pr	ocess (initial release prior to RMM):	0,95
Release fraction to wastewate RMM):	er from process (initial release prior to	2,5E-02
Release fraction to soil from p	rocess (initial release prior to RMM):	2,5E-02
	easures at process level (source) to pre	event release
	s sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions sions and releases to soil	and measures to reduce or limit disch	arges, air emis-
Risk from environmental expo	sure is driven by freshwater.	
No wastewater treatment requ		
	a typical removal efficiency of (%)	
	to receiving water discharge) to provide	0
the required removal efficience		
	vage treatment plant, no secondary	0
wastewater treatment require		
Organisational measures to	prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated,		
Conditions and Measures re	elated to municipal sewage treatment p	lant
Estimated substance removal	from wastewater via domestic sewage	94,6
treatment (%)		
	m wastewater after onsite and offsite	94,6
(domestic treatment plant) RN	/IMs (%)	

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Maximum allowable site tonnage (MSafe) based on release following	35
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 be indicated.	peen used to estimate workplace exposures unless otherwise

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

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

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

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

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

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

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

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

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

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**Exposure Scenario - Worker** 

Exposure oceriano - Worker	
30000000772	
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 MANAGEM MEASURES	ENT
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 st differently).,	ated
Frequency and Duration of	Use	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		ently).

Contributing Scenarios	Risk Management Measures
Bulk transfersUse in contained systemsPROC1PROC2PROC	
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 systems)Operation is carried out a elevated temperature (> 20°C above ambient temperature). Aerosol generation due to elevated process temperature PROC6	
SprayingMachinePROC7	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

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	Ι	
SprayingManualPROC7	Carry out in a vented booth or extract	ed enclosure.
	, or:	
	Provide a good standard of controlled	I ventilation (10 to 15 ai
	changes per hour).	,
	Avoid carrying out activities involving	exposure for more than
	4 hours	
ManualRolling, Brush-	No other specific measures identified	
ingPROC10	No all an arraific as a sum of identified	
Dipping, immersion and pouringPROC13	No other specific measures identified	•
Storage.PROC1PROC2	Store substance within a closed syste	nm
Storage.PROC1PROC2	Store substance within a closed syste	;III.
Section 2.2	ontrol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in r	egion:	0,1
Regional use tonnage (tonnes/ye		100
Fraction of Regional tonnage use	ed locally:	1
Annual site tonnage (tonnes/yea	r):	100
Maximum daily site tonnage (kg/		5,0E+03
Frequency and Duration of Us	e	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influ	uenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution facto		100
	affecting Environmental Exposure	
	ess (initial release prior to RMM):	1,0
Release fraction to wastewater for RMM):	rom process (initial release prior to	3,0E-06
,	cess (initial release prior to RMM):	0
	sures at process level (source) to pro	event release
	sites thus conservative process re-	
lease estimates used.	'	
	nd measures to reduce or limit discha	arges, air emis-
sions and releases to soil		
Risk from environmental exposu		
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 (%)		80
Treat onsite wastewater (prior to receiving water discharge) to provide 0		0
the required removal efficiency of		
If discharging to domestic sewag	je treatment plant, no secondary	0
wastewater treatment required.	rovent/limit veleges from alta	
Organisational measures to pr		
Do not apply industrial sludge to		
Sludge should be incinerated, co	mameu or recialmeu.	

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,2E+06	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for disposal		

#### Conditions and Measures related to external treatment of waste for disposal

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

#### Conditions and measures related to external recovery of waste

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

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

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** 

30000000771	
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, ERC8d, ESVOC SpERC 8.7c.v1
Scope of process	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/reject articles, and disposal of waste oils.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration 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 Man	agement Measures	
General exposures (closed sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC5PROC8aPROC8bPROC9		No other specific measures identified.	
Process samplingPROC8b		No other specific measures identified.	
Metal machining operationsP	ROC17	Provide a good standard of general or controlled ver lation (5 to 15 air changes per hour).	nti-
ManualRolling, BrushingPRO	C10	No other specific measures identified.	
SprayingPROC11		Avoid carrying out activities involving exposure for more than 1 hour.	

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	, or: Wear a respirator conforming A/P2 filter or better.	to EN140 with Type	
Treatment by dipping and pour- ingPROC13	No other specific measures id	dentified.	
Equipment cleaning and mainte- nanceNon-dedicated facilityPROC8a	No other specific measures in	No other specific measures identified.	
Equipment cleaning and maintenance- Dedicated facilityPROC8b	No other specific measures in	dentified.	
Storage.PROC1PROC2	Store substance within a clos	sed system.	
Section 2.2 Control of	of Environmental Exposure		
Substance is complex UVCB.	•		
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used in region:		0,1	
Regional use tonnage (tonnes/year):		50	
Fraction of Regional tonnage used local	lv:	5,0E-04	
Annual site tonnage (tonnes/year):	.,,.	2,5E-02	
Maximum daily site tonnage (kg/day):		6,8E-02	
Frequency and Duration of Use		1 5,52 52	
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influenced	by risk management	1 2 2 2	
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from process (init		0,15	
		5,0E-02	
Release fraction to soil from process (initial release prior to RMM): 5,0E-02			
Technical conditions and measures a	t process level (source) to pro	event release	
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions and meas	sures to reduce or limit discha	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 (%)			
Treat onsite wastewater (prior to receiving water discharge) to provide 0		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 Sludge should be incinerated, contained			
Siduge Silodid be ilicinerated, contained	i or recialified.		
Conditions and Measures related to n	nunicinal sewage treatment n	lant	
Estimated substance removal from wast		94,6	
treatment (%)	Smaler via demosite sewage	01,0	

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Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following	17
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Massures related to external 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.

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

#### Section 4.2 - Environment

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

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

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

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**Exposure Scenario - Worker** 

	Exposure deciratio - Worker		
3000000770			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Metal working fluids / rolling oils- Industrial		
Use Descriptor	Sector of Use: SU3		
·	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17 Environmental Release Categories: ERC4, ESVOC SpERC 4.7a.v1		
Scope of process	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	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)PROC1PROC2PROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.PROC5PROC8bPROC9	ent No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Metal machining operationsPROC17	No other specific measures identified.
Treatment by dipping and pouringPROC13	No other specific measures identified.

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Automated metal roll- ing/formingUse in contained sys- temsOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC2  Semi-automated metal roll- ing/formingOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC2  Semi-automated metal roll- ing/formingOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC17  Equipment cleaning and mainte- nancePROC8aPROC8b Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB. Predominantly hydrophobic.  Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 100  Fraction of Regional tonnage used locally: 1  Annual site tonnage (tonnes/year): 100  Maximum daily site tonnage (kg/day): 5,0E+03  Frequency and Duration of Use Continuous release. Emission Days (days/year): 20 Environmental factors not influenced by risk management Local freshwater dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to provide a typical removal efficiency of (%)  To develope the operation of th	SprayingPROC7		Minimise exposure by partial end equipment and provide extract ve	
ing/formingUse in contained systemsOperation is carried out at elevated temperature (> 20°C above ambient temperature). PROC2  Semi-automated metal rolling/formingOperation is carried out at elevated temperature (> 20°C above ambient temperature). PROC17  Equipment cleaning and maintenancePROC8aPROC8b  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB. Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Frequency and Duration of Use Continuous release. Emission Days (days/year): 20  Environmental factors not influenced by risk management Local freshwater dilution factor: Decan fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process	ManualRolling, BrushingPRC	C10	No other specific measures ident	ified.
ing/formingOperation is carried out at elevated temperature (> 20°C above ambient temperature (> 20°C above ambient temperature).PROC17  Equipment cleaning and maintenancePROC8aPROC8b  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Annual site tonnage (tonnes/year):  Annual site tonnage (tonnes/year):  Annual site tonnage (tonnes/year):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil fro	ing/formingUse in contained systemsOperation is carried out at elevated temperature (> 20°C above ambient tempera-		No other specific measures ident	ified.
Equipment cleaning and maintenancePROC8aPROC8b  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Local marine water dilution factor: Release fraction to air from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater freatment required. Treat air emission to provide a typical removal efficiency of (%)  Tothical conditions on provide a typical removal efficiency of (%)	ing/formingOperation is carrie at elevated temperature (> 20 above ambient tempera-			
Section 2.2   Control of Environmental Exposure   Substance is complex UVCB.   Predominantly hydrophobic.   Amounts Used   Fraction of EU tonnage used in region:   0,1   Regional use tonnage (tonnes/year):   100   Fraction of Regional tonnage used locally:   1   Annual site tonnage (tonnes/year):   100   Maximum daily site tonnage (kg/day):   5,0E+03   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):   2,0E-02   Release fraction to wastewater from process (initial release prior to RMM):   3,0E-05   RMM):   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 across sites thus conservative process release estimates used.   Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil   Risk from environmental exposure is driven by freshwater sediment.   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	nancePROC8aPROC8b	nte-	No other specific measures ident	ified.
Substance is complex UVCB. Predominantly hydrophobic.  Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year):  Indo Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Indo Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment. 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	Storage.PROC1PROC2		Store substance within a closed s	system.
Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year):  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Emission Days (days/year):  Local freshwater dilution factor:  Local marine water dilution factor:  Local marine water dilution factor:  Nelease fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)	Section 2.2	Contr	ol of Environmental Exposure	
Predominantly hydrophobic.  Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Into Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Local marine water dilution factor: Into Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment.  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	Substance is complex UVCB		•	
Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 100 Fraction of Regional tonnage used locally: 1				
Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Annual site tonnage (tonnes/year):  Annual site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Emission Days (days/year):  Local freshwater dilution factor:  Local marine water dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  OTechnical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)	, , ,			
Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  100  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  O Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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		in regio	on:	0.1
Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  5,0E+03  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  10  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  O Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)				
Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  5,0E+03  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  20  Environmental factors not influenced by risk management  Local freshwater dilution factor:  10  Cother Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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				
Maximum daily site tonnage (kg/day): 5,0E+03			, comy.	<u> </u>
Continuous release.   Continuous release.   Emission Days (days/year):   20			•	
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): 2,0E-02  Release fraction to wastewater from process (initial release prior to RMM): 3,0E-05  RMM):  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 across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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				0,02100
Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  100  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)		030		
Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  OTechnical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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				20
Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure  Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)		nfluenc	ced by risk management	120
Local marine water dilution factor:   100			ou by non managomone	10
Release fraction to air from process (initial release prior to RMM):   2,0E-02				
Release fraction to air from process (initial release prior to RMM):  Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  O  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)			cting Environmental Exposure	100
Release fraction to wastewater from process (initial release prior to RMM):  Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)				2.0F-02
Release fraction to soil from process (initial release prior to RMM):  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)	Release fraction to wastewate		1 ,	
Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)		orocess	(initial release prior to RMM):	0
Common practices vary across sites thus conservative process release estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)				event release
lease estimates used.  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Risk from environmental exposure is driven by freshwater sediment.  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 (%)				
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.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  70				
Risk from environmental exposure is driven by freshwater sediment.  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 (%)		s and m	neasures to reduce or limit disch	arges, air emis-
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		osure is	driven by freshwater sediment	
wastewater.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  70				
No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  70				
Treat air emission to provide a typical removal efficiency of (%) 70		uired		
			al removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide 0				

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the required removal efficiency of >= (%)					
If discharging to domestic sewage treatment plant, no secondary	0				
wastewater treatment required.					
Organisational measures to prevent/limit release from site					
Do not apply industrial sludge to natural soils.					
Sludge should be incinerated, contained or reclaimed.					
Conditions and Measures related to municipal sewage treatment p	lant				
Estimated substance removal from wastewater via domestic sewage	94,6				
treatment (%)					
Total efficiency of removal from wastewater after onsite and offsite	94,6				
(domestic treatment plant) RMMs (%)					
Maximum allowable site tonnage (MSafe) based on release following	8,9E+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.	regulations.				

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

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

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

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

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

Measures/Operational Conditions outlined in Section 2 are implemented.

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

#### Section 4.2 - Environment

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

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

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

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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** 

30000000769		
CECTION 4		
SECTION 1 Title	Lubricanta Professional Link Environmental Polessa	
	Lubricants- ProfessionalHigh Environmental Release	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 2 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 MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk	Management Measures	
General exposures (closed sy tems)PROC1PROC2PROC3	'S-	No other specific measures identified.	
Operation of equipment conta engine oils and similar.PROC	_	No other specific measures identified.	
General exposures (open systems)PROC4	-	No other specific measures identified.	
Bulk transfersDedicated facili- tyPROC8b	•	No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a		No other specific measures identified.	
Operation and lubrication of h energy open equipmentIn- doorPROC17PROC18	igh	Restrict area of openings to equipment.	

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Operation and lubrication of high	Wear a respirator conforming to E	N140 with Type A filter or
energy open equipmentOut-	better.	
doorPROC17		
Maintenance (of larger plant items)	No other specific measures ident	ified.
and machine set upPROC8b	Darie de la constant de la constant	
Maintenance (of larger plant items)	Drain down system prior to equip	ment opening or mainte-
and machine set upOperation is carried out at elevated tempera-	nance.	
ture (> 20°C above ambient tem-		
perature).Dedicated facili-		
tyPROC8b		
Maintenance of small itemsOpera-	Drain down system prior to equip	ment opening or mainte-
tion is carried out at elevated tem-	nance.	gg
perature (> 20°C above ambient		
temperature).Non-dedicated facili-		
tyPROC8a		
Engine lubricant servicePROC9	No other specific measures ident	ified.
ManualRolling, BrushingPROC10	No other specific measures ident	ified.
Constitution and DDCC 444	Assistance in a substitution in the	<i>(</i>
SprayingPROC11	Avoid carrying out activities involved than 1 hour.	ing exposure for more
	, or:	
	Wear a respirator conforming to E	=N140 with Type
	A/P2 filter or better.	ivi 40 with Type
	741 2 11161 61 561611	
Treatment by dipping and pour- ingPROC13	No other specific measures ident	ified.
Storage.PROC1PROC2	Store substance within a closed s	system.
-		
Section 2.2 Cont	rol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in regi		0,1
Regional use tonnage (tonnes/year)		50
Fraction of Regional tonnage used I	ocally:	5,0E-04
Annual site tonnage (tonnes/year):		2,5E-02
Maximum daily site tonnage (kg/day	<u>'):</u>	6,8E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influen	ced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affe		10.45
I Release traction to air from process	(initial release prior to RMM):	0,15
	/, ,,, ,	
Release fraction to wastewater from	process (initial release prior to	5,0E-02
Release fraction to wastewater from RMM):		·
Release fraction to wastewater from	s (initial release prior to RMM):	5,0E-02

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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.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)		
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0	
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 (%)	94,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	17	
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 regulations.	local and/or regional	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional regulations.		

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.	

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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.

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**Exposure Scenario - Worker** 

energy open equipmentIndoorPROC17PROC18

30000000768	00000768	
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 9.6b.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 MEASURES	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 100 differently).,	0% (unless stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
	an 20°C above ambient temperature (unless ard of occupational hygiene is implemented.	

Contributing Scenarios **Risk Management Measures** General exposures (closed sys-No other specific measures identified. tems)PROC1PROC2PROC3 Operation of equipment containing No other specific measures identified. engine oils and similar.PROC20 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers. Nondedicated facilityPROC8a Operation and lubrication of high Restrict area of openings to equipment.

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Operation and lubrication of high energy open equipmentOut-doorPROC17	Ensure operation is undertaken of Avoid carrying out activities involve than 4 hours , or: Wear a respirator conforming to E better.	ing exposure for more
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures identif	fied.
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b	Drain down system prior to equipr nance.	nent opening or mainte-
Maintenance of small itemsOpera-	Provide enhanced general ventila	tion by mechanical
tion is carried out at elevated tem- perature (> 20°C above ambient temperature).Non-dedicated facili- tyPROC8a	means. Avoid carrying out operation for m	ore than 4 hours.
Engine lubricant servicePROC9	No other specific measures identified	fied.
ManualRolling, BrushingPROC10	No other specific measures identified	fied.
SprayingPROC11	Avoid carrying out activities involve than 1 hour. , or: Wear a respirator conforming to EA/P2 filter or better.	
Treatment by dipping and pour-ingPROC13	No other specific measures identi	fied.
Storage.PROC1PROC2	Store substance within a closed s	ystem.
Section 2.2 Contr	rol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region	on:	0,1
Regional use tonnage (tonnes/year)		50
Fraction of Regional tonnage used lo		5,0E-04
Annual site tonnage (tonnes/year):	,	2,5E-02
Maximum daily site tonnage (kg/day	):	6,8E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influen	ced by risk management	1
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affe	ecting Environmental Exposure	
Release fraction to air from process	<u> </u>	1,0E-02
Notease fraction to all from process	minual release prior to Mining.	1,01-02

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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 (%)	
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 (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	18
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	•
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 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.

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**Exposure Scenario - Worker** 

30000000767	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17, PROC 18 Environmental Release Categories: ERC4, ERC7, ESVOC SpERC 4.6a.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment No other specific measures identified. from drums or containers. Nondedicated facilityPROC8a Filling/ preparation of equipment No other specific measures identified. from drums or containers.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 equipmentPROC17PROC18

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ManualRolling, Brush-	No other specific measures identified	d.	
ingPROC10	The same specime in sacares racinant	<b>~</b> ·	
Treatment by dipping and pour- ingPROC13	No other specific measures identified	d.	
SprayingPROC7	Minimise exposure by partial enclose equipment and provide extract vention		
Maintenance (of larger plant items) and machine set up-PROC8b	No other specific measures identified	d.	
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC8b	Drain down and flush system prior to maintenance.	o equipment opening or	
Maintenance of small itemsPROC8a	No other specific measures identified	d.	
Remanufacture of reject articlesPROC9	No other specific measures identifie	d.	
Storage.PROC1PROC2	Store substance within a closed syst	tem.	
Section 2.2 Co	ontrol of Environmental Exposure		
Substance is complex UVCB.	•		
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used in r	egion:	0,1	
Regional use tonnage (tonnes/ye		630	
Fraction of Regional tonnage use		0,16	
Annual site tonnage (tonnes/year		100	
Maximum daily site tonnage (kg/		5,0E+03	
Frequency and Duration of Use		10,02:00	
Continuous release.			
Emission Days (days/year):		20	
Environmental factors not influ	Jenced by risk management	1 = 0	
Local freshwater dilution factor:		10	
Local marine water dilution factor	r:	100	
	Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM): 5,0E-03			
	rom process (initial release prior to	3,0E-05	
	cess (initial release prior to RMM):	1,0E-03	
Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions an	d measures to reduce or limit disch	arges, air emis-	
sions and releases to soil			
Risk from environmental exposur	re is driven by freshwater sediment.		
Prevent discharge of undissolved substance to or recover from onsite			
wastewater.			
No wastewater treatment require			
Treat air emission to provide a ty	pical removal efficiency of (%)	70	

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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	94,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	8,9E+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 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.	
1	

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 Dick Management Macauras/Operational Conditions are adented then users	

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.

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

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**Exposure Scenario - Worker** 

Exposure Scenario - Worker	
30000000766	
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, ESVOC SpERC 4.5a.v1
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
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	
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	No other specific measures identified.
Cleaning of solids filtering equipmentPROC8a	No other specific measures identified.
Treatment and disposal of filtered solidsPROC3	No other specific measures identified.

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Process samplingPROC3	No other specific measures identified.
General exposures (closed systems)PROC1	No other specific measures identified.
Pouring from small containersPROC8a	No other specific measures identified.
General exposures (open systems)PROC4	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
No exposure assessment presented for the environment.	

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**

No exposure assessment presented for the environment.

Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment.

Qualitative approach used to conclude safe use.

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

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

Where other Risk Management Measures/Operational Conditions are adopted, then use 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** 

Exposure Scenario - Worker	
30000000765	
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 STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of	f Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios **Risk Management Measures** Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers. Nondedicated facilityPROC8a Automated process with (semi) No other specific measures identified. closed systems. Use in contained systemsPROC2 Automated process with (semi) No other specific measures identified. closed systems. Drum/batch transfersUse in contained systemsPROC3 Semi Automated process. (e.g.: No other specific measures identified. Semi automatic application of floor care and maintenance products)PROC4

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ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingIndoorPROC11	Limit the substance content in the product to 5 %. , or: Wear a respirator conforming to EN140 with Type A filter or better.
Cleaning with high pressure washersSprayingOutdoorPROC11	Limit the substance content in the product to 5 %. , or: Wear a respirator conforming to EN140 with Type A filter or better.
ManualSurfacesCleaningPROC10	No other specific measures identified.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	No other specific measures identified.
Cleaning of medical devicesPROC4	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.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	14
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/y	rear):	7,1E-03
Maximum daily site tonnage (	kg/day):	1,9E-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	r:	10
Local marine water dilution factor:		100
Other Operational Condition	ns affecting Environmental Exposure	)
Release fraction to air from pr	ocess (initial release prior to RMM):	2,0E-02
Release fraction to wastewate	er from process (initial release prior to	1,0E-06
RMM):		
Release fraction to soil from p	rocess (initial release prior to RMM):	0
Technical conditions and m	easures at process level (source) to	prevent release
Common practices vary acros	s sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit dis	charges, air emis-
sions and releases to soil		
Risk from environmental expo	sure is driven by freshwater.	
No wastewater treatment requ	uired.	

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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	94,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	5,4
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	•
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
1 1 2	

SECTION 3	EXPOSURE ESTIMATION

#### Section 3.1 - Health

regulations.

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

#### Section 3.2 -Environment

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

SECTION 4	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

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 - Worker** 

30000000764	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13 Environmental Release Categories: ERC4, ESVOC SpERC 4.4a.v1
Scope of process	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ns affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		
A		

Assumes a good basic standard of occupational hygiene is implemented.

**Contributing Scenarios Risk Management Measures** Bulk transfersPROC8a No other specific measures identified. Automated process with (semi) No other specific measures identified. closed systems. Use in contained systemsPROC2 Automated process with (semi) No other specific measures identified. closed systems. Drum/batch transfersUse in contained batch processesPROC3 Application of cleaning products in No other specific measures identified. closed systemsPROC2 Filling/ preparation of equipment No other specific measures identified. from drums or containers.PROC8b Use in contained batch process-No other specific measures identified. esPROC4

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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	Limit the substance content in the	product to 1 %.
washersPROC7	, or:	•
	Avoid carrying out operation for mo	ore than 1 hour.
	, alternatively:	
	Wear a respirator conforming to El	N140 with Type A filter or
	better.	
ManualCurfa and Clauring DD OC40	No other execific measures identifi	a d
ManualSurfacesCleaningPROC10	No other specific measures identifi	ea.
Storage.PROC1	Store substance within a closed sy	rstem.
Section 2.2 Con	trol of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Amounts Used		•
Fraction of EU tonnage used in reg	ion:	0,1
Regional use tonnage (tonnes/year		240
Fraction of Regional tonnage used		0,41
Annual site tonnage (tonnes/year):		100
Maximum daily site tonnage (kg/da	y):	5,0E+03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influe	nced by risk management	•
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions aff	ecting Environmental Exposure	
Release fraction to air from process	s (initial release prior to RMM):	1,0
Release fraction to wastewater from	n process (initial release prior to	3,0E-06
RMM):		
Release fraction to soil from proces		0
	res at process level (source) to pr	event release
Common practices vary across site	s thus conservative process re-	
lease estimates used.		
	measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental exposure		
Prevent discharge of undissolved s	ubstance to or recover from onsite	
wastewater.		
No wastewater treatment required.	1 (6)	70
Treat air emission to provide a typical removal efficiency of (%)		70
real silent masteriates (prior to receiving mater alcomange) to provide		0
the required removal efficiency of >		
If discharging to domestic sewage t	rearment plant, no secondary	0
wastewater treatment required.	ont/limit rologgo from site	1
Organisational measures to prev		
Do not apply industrial sludge to na	iturai 50115.	

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Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment pl	ant
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,2E+06
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

SECTION 4

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.		

CHIDANCE TO CHECK COMPLIANCE WITH THE

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** 

3000000763	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 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	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	s- No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Use contained systemsPROC2	
General exposures (closed sy tems)Use in contained systemsPROC2	s- No other specific measures identified.
Preparation of material for app cationUse in contained batch processesPROC3	No other specific measures identified.
Film formation - air dryingPRC	No other specific measures identified.
Preparation of material for app cationPROC5	No other specific measures identified.

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Material transfersDrum/batch transfersNon-dedicated facilityPROC8aPROC8b	No other specific measures identified.
Roller, spreader, flow applicationPROC10	No other specific measures identified.
ManualSprayingIndoorPROC11	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Limit the substance content in the mixture to 50 %.  , or:  Wear a respirator conforming to EN140 with Type A filter or better.
ManualSprayingOutdoorPROC11	Ensure operation is undertaken outdoors. Limit the substance content in the mixture to 50 %. Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better.
Dipping, immersion and pouringPROC13	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Hand application - fingerpaints, pastels, adhesivesIndoorPROC19	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Hand application - fingerpaints, pastels, adhesivesOut-doorPROC19	Ensure operation is undertaken outdoors.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	110
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	5,4E-02
Maximum daily site tonnage	(kg/day):	0,15
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution fact	or:	10
Local marine water dilution fa	actor:	100
Other Operational Conditions affecting Environmental Exposure		)
Release fraction to air from p	rocess (initial release prior to RMM):	0,98
Release fraction to wastewat	er from process (initial release prior to	1,0E-02
RMM):		

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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 the required removal efficiency of >= (%)	0
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 (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	4,0E+01
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	
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		

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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.

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**Exposure Scenario - Worker** 

Exposure Scenario - Worker		
30000000762		
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 Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	
	8 hours (unless stated differently).
Other Operational Condition	
	n 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 drying, stoving and other technologies.(closed systems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2	No other specific measures identified.
Mixing operations (closed systems)Use in contained	No other specific measures identified.

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No other specific measures identified		
The earler openine measures racramear		
No other specific measures identified		
Preparation of material for No other specific measures identified.		
Carry out in a vented booth provided with	n laminar airflow.	
Carry out in a vented booth provided with	n laminar airflow.	
, or:		
Wear a respirator conforming to EN140 v	with Type A filter or	
better.	• •	
No other specific measures identified.		
No other specific measures identified.		
No other specific measures identified.		
No other specific measures identified.		
pouringPROC13  Laboratory activi-  No other specific measures identified.		
No other specific measures identified.		
tiesPROC15  Material trans-  No other specific measures identified.		
No other specific measures identified.		
Store substance within a closed avistam		
Store substance within a closed system.		
No other specific measures identified		
The other specific measures identified.		
Store substance within a closed system		
Clore cubciance within a closed cyclem.		
Control of Environmental Exposure		
	1	
in region:	0,1	
<u> </u>	370	
	1	
	370	
	1,9E+04	
	, ,- ,-	
Frequency and Duration of Use Continuous release.		
	20	
nfluenced by risk management	20	
nfluenced by risk management	20	
	Wear a respirator conforming to EN140 vector.  No other specific measures identified.  Store substance within a closed system.  Control of Environmental Exposure  in region: s/year): used locally: year): (kg/day):	

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Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	9,8E-01
Release fraction to wastewater from process (initial release prior to	7,0E-04
RMM): Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to process	U
Common practices vary across sites thus conservative process re-	- CVCIII TOTOGOC
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	<b>J</b> ,
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	89,1
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 (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following	3,8E+04
total wastewater treatment removal (kg/d)	,
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
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 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.

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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

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

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

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

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

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**Exposure Scenario - Worker** 

30000000761	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	Sector of Use: SU3 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 Condition	ns affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		
A service a second basis at an aloud of second tisual broadens is incular and ad-		

Assumes a good basic standard of occupational hygiene is implemented.

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Batch processes at elevated Formulate in enclosed or ventilated mixing vessels. temperaturesOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC3 Process samplingPROC3 No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. Bulk transfersPROC8b No other specific measures identified. Mixing operations (open sys-No other specific measures identified.

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tems)PROC5		
ManualTransfer from/pouring	No other specific measures identified	1
from containersNon-dedicated	140 other specific measures identified	۸.
facilityPROC8a		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified	d.
Production or preparation or	No other specific measures identified	
articles by tabletting, compres-	The other specific measures identified	<b>.</b>
sion, extrusion or pelletisa-		
tionPROC14		
Drum and small package fill-	No other specific measures identified	d.
ingPROC9	·	
Equipment cleaning and	No other specific measures identified	d.
maintenancePROC8a		
Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2	Control of Environmental Exposure	1
Substance is complex UVCB.	Control of Environmental Exposure	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in	region:	0,1
Regional use tonnage (tonnes/		70
Fraction of Regional tonnage u		1
		70
	Annual site tonnage (tonnes/year):	
Maximum daily site tonnage (kg/day):  Frequency and Duration of Use		7,0E+03
Continuous release.	30	
		10
Emission Days (days/year): 1 Environmental factors not influenced by risk management		110
Local freshwater dilution factor:		10
Local marine water dilution fact		100
Other Operational Conditions	s affecting Environmental Exposure	1.00
	cess (initial release prior to RMM):	1,0E-02
	from process (initial release prior to	2,0E-04
RMM):	. ,	
Release fraction to soil from pro	ocess (initial release prior to RMM):	1,0E-04
	asures at process level (source) to pr	event release
Common practices vary across	sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		_
	ure is driven by freshwater sediment.	
· ·	ed substance to or recover from onsite	
wastewater.		
No wastewater treatment requi		0
	Treat air emission to provide a typical removal efficiency of (%)	
	to receiving water discharge) to provide	0
the required removal efficiency		
	age treatment plant, no secondary	0
Wastewater treatment required.		
Organisational measures to	prevent/limit release from site	

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Do not apply industrial sludge to natural soils.

Sludge should be incinerated, contained or reclaimed.

Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,3E+05	
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 EXPO	SURE 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	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE</b>
	EYPOSTIPE SCENAPIO

#### Section 4.1 - Health

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

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

#### Section 4.2 -Environment

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

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

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

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Section 2.2

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**Exposure Scenario - Worker** 

Exposure occinio - worker	
30000000759	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 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 basic standard of occupational hygiene is implemented.		

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Process samplingPROC8b No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. No other specific measures identified. Bulk transfers(open systems)PROC8b Bulk transfers(closed sys-No other specific measures identified. tems)PROC8b Equipment cleaning and No other specific measures identified. maintenancePROC8a Storage.PROC1PROC2 Store substance within a closed system.

**Control of Environmental Exposure** 

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0.1.4	Т
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	T
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	9,5E+03
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	9,5E+03
Maximum daily site tonnage (kg/day):	9,5E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	100
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to	3,0E-04
RMM):	0,02 0 .
Release fraction to soil from process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to pre	
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discharge	arges, air emis-
sions and releases to soil	argoo, an onno
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	74,9
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.	
Prevent discharge of undissolved substance to or recover from onsite w	astewater
Trevent disoritings of difficultived substance to of receiver from oriotte w	asicwater.
Conditions and Measures related to municipal sewage treatment pl	lant
Estimated substance removal from wastewater via domestic sewage	94,6
treatment (%)	0 1,0
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	J-1,U
Maximum allowable site tonnage (MSafe) based on release following	4,4E+05
total wastewater treatment removal (kg/d)	→, <b>¬∟</b> 100
Assumed domestic sewage treatment plant flow (m3/d)	1,0E+04
Conditions and Measures related to external treatment of waste for	
	uispusai
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.

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**Exposure Scenario - Worker** 

30000000760	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC 6C,, ERC7, ESVOC SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Process samplingPROC3 No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. No other specific measures identified. Bulk transfers(closed systems)PROC8b Bulk transfers(open sys-No other specific measures identified. tems)PROC8b Drum and small package fill-No other specific measures identified. ingPROC9 Equipment cleaning and No other specific measures identified. maintenancePROC8a 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.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	150
Fraction of Regional tonnage		6,8E-03
Annual site tonnage (tonnes/	year):	1,0
Maximum daily site tonnage	(kg/day):	50
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	•
Local freshwater dilution fact		10
Local marine water dilution fa	actor:	100
<b>Other Operational Condition</b>	ns affecting Environmental Exposure	•
•	rocess (initial release prior to RMM):	1,0E-04
Release fraction to wastewat	er from process (initial release prior to	1,0E-05
RMM): Release fraction to soil from	process (initial release prior to RMM):	1,0E-05
	neasures at process level (source) to p	
	ss sites thus conservative process re-	
lease estimates used.		
	s and measures to reduce or limit discl	harges, air emis-
sions and releases to soil		
Risk from environmental exp	osure is driven by freshwater.	
No wastewater treatment req		
Treat air emission to provide	a typical removal efficiency of (%)	90
Treat onsite wastewater (price	or to receiving water discharge) to provide	0
the required removal efficiend		
If discharging to domestic se	wage treatment plant, no secondary	0
wastewater treatment require	ed.	
	prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated	I, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant		plant
	Il from wastewater via domestic sewage	94,6
treatment (%)		0.4.0
•	om wastewater after onsite and offsite	94,6
(domestic treatment plant) R		1 45 04
	age (MSafe) based on release following	1,4E+04
total wastewater treatment re		0.05.00
Assumed domestic sewage t		2,0E+03
	elated to external treatment of waste for	
External treatment and disporegulations.	sal of waste should comply with applicabl	e local and/or regional
	elated to external recovery of waste	
External recovery and recycli	ing of waste should comply with applicable	e local and/or regional

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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 Scenario - Worker** 

Exposure Contains Worker		
3000000781		
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 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		
	8 hours (unless stated differently).	
Other Operational Conditio		
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)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.PROC1	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used		0,1
Regional use tonnage (tonne	s/year):	340

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Fraction of Regional tonnage used locally:	8,8E-02
Annual site tonnage (tonnes/year):	3,0E-01
Maximum daily site tonnage (kg/day):	1,0E+02
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	0,95
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.	
If discharging to domestic sewage treatment plant, additional onsite	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	98,5
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	71,9
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 treatment (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite	98,5
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	1,0E+02
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 regulations.	local and/or regional

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

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indicated.

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

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

#### Section 4.2 - Environment

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

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

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

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**Exposure Scenario - Worker** 

Exposure Contains Works		
30000000782		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Water treatment chemicals- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1	
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.	

SECTION 2	OPERATIONAL CONDITIONS AND RIS	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Sub-	Covers use of substance/product up to 10	00% (unless stated
stance in Mixture/Article	differently).,	•
Frequency and Duration of		
	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.PROC1	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		0,1
Regional use tonnage (tonne		130
Fraction of Regional tonnage	used locally:	1,1E-02
Annual site tonnage (tonnes/	year):	1,5

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Maximum daily site tonnage (kg/day):	4,0
Frequency and Duration of Use	14,0
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	000
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	0,99
RMM):	0,00
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	1
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	64,3
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.	
Sludge should be incinerated, contained of reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	94,6
treatment (%)	0 .,0
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	26
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.		

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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** 

30000001116	
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	Control of Consumer Exposure	
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 Pa		
Concentration of the Substance in Mixture/Article	Unless stated otherwise.		
	Covers concentration up to (%): 100 %		
Amounts Used			
Unless stated otherwise.			
for each use event, covers amount up to (g):		2.200	
covers skin contact area (cm2):		468	
Frequency and Duration o	f Use		
Unless stated otherwise.			
Covers use up to (days/year):		4	
covers use up to (times/day of use):		1	
Exposure (hours/event): 0,17		0,17	
Other Operational Conditi	ons affecting Exposure		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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 use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 2.200 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,17 hours/event	
Hydraulic fluids Liquids.	Covers concentrations up to 100 %	

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covers use up to 4 day/year
Covers use up to 1 times/day of use
covers skin contact area up to (cm2): 468,00 cm2
For each use event, covers amount up to 2.200 g
Covers use in a one car garage (34 m3) under typical ventila-
tion.
Covers use in room size of 34 m3
Covers exposure up to 0,17 hours/event

Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	3,0
Fraction of Regional tonnage		5,0E-04
Annual site tonnage (tonnes/)	/ear):	1,5E-03
Maximum daily site tonnage (	kg/day):	4,1E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
	ocess (initial release prior to RMM):	5,0E-02
Release fraction to wastewater from process (initial release prior to RMM):		2,5E-02
Release fraction to soil from p	process (initial release prior to RMM):	2,5E-02
Conditions and Measures re	elated to municipal sewage treatment p	olant
Risk from environmental expo	sure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage treatment (%)		94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		1,1
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 consumer 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** 

30000001115	
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 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g): 37.5		37.500
covers skin contact area (cm2):		420
Frequency and Duration of	Use	
Unless stated otherwise.Cov	ers use up to (days/year):	
Covers use up to (days/year): 365		365
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

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 %	

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	covers use up to 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210 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 Equipment - Use.	Covers concentrations up to 100 %
•	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
qa.pg.	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 heater fuel.	Covers concentrations up to 100 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.000 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	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 20 m3
	Covers exposure up to 0,01 hours/event
	1 COVERS EXPOSE OF TO 0,01 HOURS/CVCIIL

Section 2.2	Control of Environmental Exposu	ire
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		
Regional use tonnage (tonnes/year): 2,4E+03		2,4E+03
Fraction of Regional tonnage used locally: 5,0E-04		5,0E-04

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Annual site tonnage (tonnes/year):	1,2 3,2		
Maximum daily site tonnage (kg/day):	3,2		
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 process (initial release prior to RMM):	1,0E-04		
Release fraction to wastewater from process (initial release prior to	1,0E-05		
RMM):			
Release fraction to soil from process (initial release prior to RMM):	1,0E-05		
Conditions and Measures related to municipal sewage treatment p	lant		
Risk from environmental exposure is driven by freshwater.			
Estimated substance removal from wastewater via domestic sewage	94,6		
treatment (%)			
Maximum allowable site tonnage (MSafe) based on release following	8,4E+02		
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.			
Conditions and measures related to external recovery of waste			
This substance is consumed during use and no waste of substance is g	jenerated.		

SECTION 3		EXPOSURE ESTIMATION		

Section 3.1 - Health

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

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

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

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

Predicted exposures are not 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.

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**Exposure Scenario - Consumer** 

30000001114		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Agrochemicals uses - Consumer	
Use Descriptor	Sector of Use: SU21 Product Categories: , PC27 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1	
Scope of process	Covers the consumer use in agrochemicals in liquid and solid forms.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Consumer Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 Pa		
Concentration of the Substance in Mixture/Article	Unless stated otherwise.		
	Covers concentration up to (%): 5	0 %	
Amounts Used			
Unless stated otherwise.			
covers skin contact area (cr	m2):	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 Conditi	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

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	
	Covers exposure up to 4 hours/event	
	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	

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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	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	10
Fraction of Regional tonnage	used locally:	2,0E-03
Annual site tonnage (tonnes/		2,0E-02
Maximum daily site tonnage (	kg/day):	5,5E-02
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
	rocess (initial release prior to RMM):	0,9
	er from process (initial release prior to	1,0E-02
RMM):		
	process (initial release prior to RMM):	9,0E-02
	elated to municipal sewage treatment p	lant
Risk from environmental expo		
	I from wastewater via domestic sewage	94,6
treatment (%)		
Maximum allowable site tonnatoral wastewater treatment re	age (MSafe) based on release following	1,4E+01
Assumed domestic sewage tr		2,0E+03
	elated to external treatment of waste fo	,
	sal of waste should comply with applicable	
	sai oi wasto siloala sollipiy with applicable	, local alla, 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 otherw			
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	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE</b>
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

#### Section 4.2 - Environment

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

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

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

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**Exposure Scenario - Consumer** 

20000004440		
30000001113		
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 8.6e.v1	
	20 V 00 0 PENO 0.00.V 1	
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	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
Covers concentration up to (%): 100 %		00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g): 6.390		6.390
covers skin contact area (cm	2):	468
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): 8		8
Other Operational Conditions affecting Exposure		
I I allowed a Control of Charles Control		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 9 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3

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	Covers exposure up to 4,00 hours/event	
Adhesives, sealants Glues	Covers concentrations up to 30 %	
DIY-use (carpet glue, tile	Covers concentrations up to 30 %	
glue, wood parquet glue).		
gido, wood parquot gido).	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	Covers concentrations up to 30 %	
from spray.	Covers concerniations up to 50 %	
nom spray.	covers use up to 6 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,73 cm2	
	For each use event, covers amount up to 85,05 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
<del> </del>	Covers exposure up to 4,00 hours/event	
Adhesives, sealants Seal-	Covers concentrations up to 30 %	
ants.		
	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	
	Avoid using when windows closed.	
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %	
	covers use up to 4 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 2.200 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,17 hours/event	
Lubricants, greases, re-	Covers concentrations up to 20 %	
lease products Pastes.	, i	
	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	

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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
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
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	<b>Control of Environmental Exposure</b>		
Substance is complex UVCB.	Substance is complex UVCB.		
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	50	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/	year):	2,5E-02	
Maximum daily site tonnage (	Maximum daily site tonnage (kg/day):		
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	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):		0,15	
Release fraction to wastewater from process (initial release prior to RMM):		5,0E-02	
Release fraction to soil from process (initial release prior to RMM):		5,0E-02	
Conditions and Measures related to municipal sewage treatment plant		plant	
Risk from environmental exposure is driven by freshwater.			
Estimated substance removal from wastewater via domestic sewage treatment (%)		94,6	

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Maximum allowable site tonnage (MSafe) based on release following	17
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 be indicated.	peen used to estimate consumer exposures unless otherwise	

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

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

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

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

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

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

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

Required removal efficiency for wastewater can be achieved using onsite/offsite 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** 

30000001112	
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
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 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%):	100 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers 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 (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		8
Other Operational Condition	ons affecting Exposure	
Liniaga atatad athamuiag		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 9 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3

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	Covers exposure up to 4,00 hours/event	
Adhesives, sealants Glues	Covers exposure up to 4,00 nours/event  Covers concentrations up to 30 %	
DIY-use (carpet glue, tile glue, wood parquet glue).	Govers concentrations up to 30 70	
grace, me car pen que e grace,	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 %	
-1 -2	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 Seal-	Covers concentrations up to 30 %	
ants.	·	
	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	
	Avoid using when windows closed.	
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %	
	covers use up to 4 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 2.200 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,17 hours/event	
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	

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# **ShellSol A150**

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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
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
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.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	50
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/y	/ear):	2,5E-02
Maximum daily site tonnage (		6,8E-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 process (initial release prior to RMM):		1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):		1,0E-02
Release fraction to soil from process (initial release prior to RMM): 1,0E		1,0E-02
Conditions and Measures related to municipal sewage treatment plant		
Risk from environmental exposure is driven by freshwater.		
Estimated substance removal from wastewater via domestic sewage treatment (%)		94,6

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Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	18
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

#### Conditions and Measures related to external treatment of waste for disposal

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

#### Conditions and measures related to external recovery of waste

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

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

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

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE 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** 

30000001111	
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 CONDITION MEASURES	S AND RISK MANAGEMENT
Section 2.1	Control of Consumer Expos	ure
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 (%	6): 100 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		13.800
covers skin contact area (cm2):		857,5
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 temp Covers use in room size of 2 Covers use under typical ho	20m3	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Air care products Air care, instant action (aerosol sprays).	Covers concentrations up to 50 %
	covers use up to 365 day/year
	covers use up to 4 times/day of use
	For each use event, covers amount up to 0.1 g

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	Covers use in ream size of 20 m2
	Covers use in room size of 20 m3
A'	Covers exposure up to 0,25 hours/event
Air care products Air care, instant action (aerosol sprays). pesticides (excipient only).	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 5 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,25 hours/event
Air care products Air care, 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, continuous action (solid and liquid). pesticides (excipient only).	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): 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 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 ventilation.
	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-

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	tion.
	Covers use in room size of 34 m3
Anti-Freeze and de-icing	Covers exposure up to 0,17 hours/event  Covers concentrations up to 50 %
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 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	Covers concentrations up to 5 %
and dish washing products.	
<del>~ .</del>	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
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 20 m3
	Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners,	Covers concentrations up to 15 %
trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	
	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.
	Covers use in room size of 20 m3

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	Covers companies to 0.47 hours/suppl
Coatings and points thin	Covers exposure up to 0,17 hours/event
Coatings and paints, thin- ners, paint removers Wa- terborne latex wall paint.	Covers concentrations up to 1,5 %
terborne latex wall paint.	Covers use under typical household ventilation.
	For each use event, covers amount up to 2.760 g
	covers skin contact area up to (cm2): 428,75 cm2
	Covers use up to 1 times/day of use
	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.	Govers concentrations up to 21,5 %
	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 2,2 hours/event
Coatings and paints, thin- ners, paint removers Aero- sol 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 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
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

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	Covers expecting up to 0.17 hours/event
Lubricanta graccas ra	Covers exposure up to 0,17 hours/event  Covers concentrations up to 20 %
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
lease products r astes.	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, re-	Covers concentrations up to 50 %
lease products Sprays.	Covere consentations up to 60 %
	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	Covers concentrations up to 5 %
products (including solvent	
based products) Laundry	
and dish washing products.	
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,50 hours/event
Washing and cleaning	Covers concentrations up to 5 %
products (including solvent	
based products) Cleaners,	
liquids (all purpose clean-	
ers, sanitary products, floor	
cleaners, glass cleaners,	
carpet cleaners, metal	
cleaners).	covers use up to 128 day/year
	Covers use up to 126 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 20 m3
	Covers exposure up to 0,33 hours/event
Washing and cleaning	Covers concentrations up to 15 %
products (including solvent	Covere concentrations up to 10 /0
based products) Cleaners,	
trigger sprays (all purpose	
cleaners, sanitary products,	
glass cleaners).	
g.sco ologiloloji	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	1 22.2.2 200 up to 1 miles, day of doo

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	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, assumes swallowed amount of 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	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 20 m3
	Covers exposure up to 1,00 hours/event

Section 2.2	Control of Environmental Exposure		
Substance is complex UVC	3.		
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	d in region:	0,1	
Regional use tonnage (tonn	es/year):	1,2E-02	
Fraction of Regional tonnage	e used locally:	5,0E-04	
Annual site tonnage (tonnes	/year):	6,2E-06	
Maximum daily site tonnage		1,7E-05	
Frequency and Duration o	f 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	
	ons affecting Environmental Exposure		
	process (initial release prior to RMM):	0,95	
Release fraction to wastewa RMM):	ter from process (initial release prior to	2,5E-02	
Release fraction to soil from	process (initial release prior to RMM):	2,5E-02	
<b>Conditions and Measures</b>	related to municipal sewage treatment p	olant	
	posure is driven by freshwater.		
	al from wastewater via domestic sewage	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		4,0E-03	
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03	
	related to external treatment of waste for	or disposal	
	osal of waste should comply with applicable		
Conditions and mossures	related to external recovery of waste		

# Conditions and measures related to external recovery of waste

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

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SECTION 3	<b>EXPOSURE ESTIMATION</b>

#### 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.

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**Exposure Scenario - Consumer** 

30000001110	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3c.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa	a at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		13.800
covers skin contact area (cm2):		857,5
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 in room size of 20m3

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 9 g
	Covers use in room size of 20 m3

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	Covers expecting to 4 hours/event
	Covers exposure up to 4 hours/event
A II	Covers use under typical household ventilation.
Adhesives, sealants Glues DIY-use (carpet glue, tile glue, wood parquet glue).	Covers concentrations up to 30 %
gide, wood parquet gide).	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
All as' as a salasta Ol	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
	Avoid using when windows closed.
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 50 %
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 20 m3
Biocidal products (e.g. Dis-	Covers exposure up to 0,50 hours/event  Covers concentrations up to 5 %
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners).	Covers concentrations up to 15 %
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 1,5 %

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nore point removers We	
ners, paint removers Waterborne latex wall paint.	
terborne latex wall paint.	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 27,3 %
	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- sol spray can.	Covers concentrations up to 50 %
oor opray cam	covers use up to 2 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,33 hours/event
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 50 %
	covers use up to 3 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Fillers and putty.	Covers concentrations up to 2 %
	covers use up to 12 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Fillers, Putties Plasters and	Covers concentrations up to 2 %

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floor equalizers.	
	covers use up to 12 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 13.800 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Modelling clay.	Covers concentrations up to 1 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1 g
Finger paints	Covers concentrations up to 1,25 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1,35 g
Non-metal-surface treatment products Waterborne latex wall paint.	Covers concentrations up to 1,5 %
istor trail paint.	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	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 %
1 7	covers use up to 2 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,33 hours/event
Non-metal-surface treat-	Covers concentrations up to 50 %

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mont products Domovers	T
ment products Removers (paint-, glue-, wall paper-,	
sealant-remover).	anyone was 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 20 m3
	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 20 m3
	Covers exposure up to 1,23 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care products Polishes, spray	
(furniture, shoes).	
	covers use up to 8 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Lubricants, greases, re-	Covers concentrations up to 100 %
lease products Liquids.	·
	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

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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, re-	Covers concentrations up to 50 %
lease products Sprays.	<u>'</u>
	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 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
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 in room size of 20 m3
	Covers exposure up to 1,00 hours/event
	Covers exposure up to 1,00 hours/event

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

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Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	5,1
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	2,6E-03
Maximum daily site tonnage (kg/day):	7,0E-03
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 process (initial release prior to RMM):	0,985
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):	5,0E-03
Conditions and Measures related to municipal sewage treatment p	olant
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage	94,6
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	1,8
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	
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	
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		

Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users

should ensure that risks are managed to at least equivalent levels.

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#### Section 4.2 - Environment

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