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

#### 1.1 Product identifier

Trade name : ShellSol A150 ND

Product code : Q7497

Registration number EU : 01-2119463583-34-0002

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

EC-No. : 918-811-1

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)

Poison information: +47 22 591300

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.

Specific target organ toxicity - single ex- H336: May cause drowsiness or dizziness.

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posure, Category 3, Narcotic effects

Long-term (chronic) aquatic hazard, Cat- H411: Toxic to aquatic life with long lasting effects.

egory 2

#### 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

<u>(!</u>)





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.

**ENVIRONMENTAL HAZARDS:** 

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Precautionary statements : Prevention:

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

P273 Avoid release to the environment.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

2.3 Other hazards

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

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

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In use, 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	918-811-1	

#### **Further information**

#### Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Naphthalene	·	Acute Tox.4; H302 Carc.2; H351 Aquatic Acute1; H400 Aquatic Chronic1; H410	< 1

# **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.

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

rinsing.

If persistent irritation occurs, obtain medical attention.

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

If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

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

Symptoms : 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.

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 burn-

ing 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.

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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.

### **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.

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### 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.

If contamination of site occurs remediation may require spe-

cialist advice.

### 6.4 Reference to other sections

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

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

# 7.1 Precautions for safe handling

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

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

Section 8 of this Safety Data Sheet.

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

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

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

Avoid contact with skin, eyes and clothing.

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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.

Hygiene measures

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

# 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

: Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Further information on storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

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

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reduce the risk.

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

ble.

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

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

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

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

near containers.

7.3 Specific end use(s)

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

tered uses under REACH.

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

on Static Electricity).

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

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

#### 8.1 Control parameters

#### **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Aromatic solvents 160 - 185	Not As- signed	TWA	100 mg/m3	EU HSPA
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	TWA	25 ppm 120 mg/m3	FOR-2011- 12-06-1358

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

No biological limit allocated.

### 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

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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% naph- thalene	Consumers	Dermal	Long-term systemic effects	7,5 mg/kg bw/day

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

Substance name		Environmental Compartment	Value
Hydrocarbons, C10, ard	omatics,		
<1% naphthalene			
Remarks:	Substance	e is a hydrocarbon with a complex, unknown or	variable composi-
	tion. Conv	rentional methods of deriving PNECs are not a	ppropriate and it is
	not possib	le to identify a single representative PNEC for	such substances.

#### 8.2 Exposure controls

#### **Engineering measures**

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

#### General Information:

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

Define procedures for safe handling and maintenance of controls.

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

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

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

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

#### Personal protective equipment

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

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

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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. Contami-

nated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed

and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

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

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 Standard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

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

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

tions to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.

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

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

priate combination of mask and filter.

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

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

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

# 9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : aromatic

Odour Threshold : Data not available

Melting point/freezing point : Data not available

Boiling point/boiling range : Typical 183 - 197 °C

Flammability

Flammability (solid, gas) : Data not available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit

upper flammability limit

6 %(V)

Lower explosion limit / Lower flammability limit Lower flammability limit

0,6 %(V)

Flash point : Typical 63 °C

Method: ASTM D-93 / PMCC

Auto-ignition temperature : 499 °C

Method: ASTM E-659

477 °C

Method: DIN 51794

Decomposition temperature

Decomposition tempera-

ture

Data not available

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pH : Data not available

Viscosity

Viscosity, dynamic : Data not available

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

Method: ASTM D445

Solubility(ies)

Water solubility : immiscible

Partition coefficient: n-

octanol/water

 $\log Pow: > 3.7 - 4.2$ 

Vapour pressure : Typical 150 Pa

Relative density : Data not available

Density : Typical 884 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : Data not available

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : Not applicable

Oxidizing properties : Data not available

Evaporation rate : 0,1

Method: ASTM D 3539, nBuAc=1

Conductivity : estimated value(s) 3 pS/m at 20 °C

Method: ASTM 3114

Low conductivity: < 100 pS/m

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

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

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

can greatly influence the conductivity of a liquid

Surface tension : Data not available

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### **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

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

# 10.2 Chemical stability

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

# 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

#### 10.4 Conditions to avoid

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

In certain circumstances product can ignite due to static elec-

tricity.

#### 10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

# 10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

### **SECTION 11: Toxicological information**

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

Information on likely routes of : Exposure may occur via inhalation, ingestion, skin absorption,

exposure skin or eye contact, and accidental ingestion.

#### **Acute toxicity**

# **Components:**

# Hydrocarbons, 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.

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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.

# 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, aromat-	No carcinogenicity classification.

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ics, <1% naphthalene	
Naphthalene	Carcinogenicity Category 2

Material	Other Carcinogenicity Classification
Naphthalene	IARC: Group 2B: Possibly 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.

# 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.

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#### 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.

#### **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

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

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

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#### 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:

Mobility : Remarks: Floats on water.

#### 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.

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# **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.

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

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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

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

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#### 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

Product Registration number : Avventer registrering.

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).

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

E2 ENVIRONMENTAL

**HAZARDS** 

#### Other regulations:

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

Product is subject to Control of Major Accident Hazards Involving Dangerous Substances, Regulation, 2016.

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

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KECI : Listed

PICCS : Listed

TSCA : Listed

TCSI : Listed

NZIoC : Listed

ENCS : 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

EU HSPA : OEL based on European Hydrocarbon Solvents Producers

(CEFIC-HSPA) methodology.

FOR-2011-12-06-1358 : Norway. Occupational Exposure limits

EU HSPA / TWA : Time-Weighted Average Concentration (TWA) (8 hrs.)

FOR-2011-12-06-1358 / : Long term exposure limit

TWA

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 Re-

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

#### **Further information**

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

erators.

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

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

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

ered to be PBT or vPvB.

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

from the previous version.

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

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).

100=12 date base, = 0 1=1 = 10g diano..., 010).

# Classification of the mixture: Classification procedure:

Asp. Tox. 1 H304 Expert judgement and weight of evi-

dence determination.

STOT SE 3 H336 Expert judgement and weight of evi-

dence determination.

Aquatic Chronic 2 H411 Expert judgement and weight of evi-

dence determination.

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

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**Uses - Worker** 

Title : Water treatment chemicals- Professional

**Uses - Worker** 

Title : Water treatment chemicals- Industrial

**Uses - Worker** 

Title : Use in laboratories- Professional

**Uses - Worker** 

Title : Use in laboratories- Industrial

**Uses - Worker** 

Title : Functional Fluids- Professional

**Uses - Worker** 

Title : Functional Fluids- Industrial

**Uses - Worker** 

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- ProfessionalHigh Environmental Release

**Uses - Worker** 

Title : Lubricants- ProfessionalLow Environmental Release

**Uses - Worker** 

Title : Lubricants- Industrial

**Uses - Worker** 

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

Industrial

**Uses - Worker** 

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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- Indus-

trial

**Uses - Worker** 

Title : Distribution of substance- Industrial

**Uses - Worker** 

Title : Manufacture of substance- Industrial

**Identified Uses according to the Use Descriptor System** 

**Uses - Consumer** 

Title : Uses in Coatings

- Consumer

**Uses - Consumer** 

Title : Use in Cleaning Agents

- Consumer

**Uses - Consumer** 

Title : Lubricants

- Consumer

Low Environmental Release

**Uses - Consumer** 

Title : Lubricants

- Consumer

High Environmental Release

**Uses - Consumer** 

Title : Use in Agrochemicals uses

- Consumer

**Uses - Consumer** 

Title : Use as a fuel

- Consumer

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**Uses - Consumer** 

Title : Functional Fluids

- 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.

NO / EN

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**Exposure Scenario - Worker** 

300000000727	OTNO!
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 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 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			
	an 20°C above ambient temperature (unles ard of occupational hygiene is implemented		
Contributing Scenarios	Risk Management Measures		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
General exposures (closed systems)PROC3	No other specific measures identified.		
General exposures (open systems)PROC4	No other specific measures identified.		
Pouring from small containersPROC13	No other specific measures identified.		
Equipment maintenance- PROC8a	No other specific measures identified.		
Storage.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	legional use tonnage (tonnes/year): 1,0E+02		
Fraction of Regional tonnage used locally: 1,5E-02			
Annual site tonnage (tonnes/	e tonnage (tonnes/year): 1,5		

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Maximum daily site tonnage (kg/day):	4,0
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	0,99
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	<b>J</b> ,
Risk from environmental exposure is driven by soil.	
If discharging to domestic sewage treatment plant, no 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	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.	
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	94,6
(domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following	26
total wastewater treatment removal (kg/d)	20
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	

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

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# Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

#### Section 4.2 - Environment

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

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

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

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

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**Exposure Scenario - Worker** 

30000000726	
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 Sub-	Covers use of substance/product up to 1	00% (unless stated
stance in Mixture/Article	differently).,	•
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	ns affecting Exposure	
	an 20°C above ambient temperature (unles	s stated differently).
Assumes a good basic stand	ard of occupational hygiene is implemented	d.
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	in region:	0,1
Regional use tonnage (tonne		1,1E+02

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Fraction of Regional tonnage used locally:	2,7E-01
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 pro-	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	•
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, provide the re-	71,9
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage treatment (%)	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 for	
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 b	een 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.

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

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**Exposure Scenario - Worker** 

30000000725	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC8a, ESVOC SpERC 8.17.v1
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RIS	SK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STI	P
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 1 differently).,	00% (unless stated
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		
Assumes use at not more that	an 20°C above ambient temperature (unles	ss stated differently).
Assumes a good basic standard of occupational hygiene is implemented.		
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 UVCE	).	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	es/year):	1,0E-01
Fraction of Regional tonnage	e used locally:	5,0E-04
Annual site tonnage (tonnes	/year):	5,0E-05
Maximum daily site tonnage		1,4E-04
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		
	influenced by risk management	T
Local freshwater dilution fact		10
ocal marine water dilution factor: 100		
Other Operational Condition	ons 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 release 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 (%)	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)	6,8E-02
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

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 occuratio - Worker		
30000000724	0000724		
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Use in laboratories- Industrial		
Use Descriptor	Sector of Use: SU3		
•	Process Categories: PROC 10, PROC 15		
	<b>Environmental Release Categories</b> : ERC2, ERC4		
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.		

SECTION 2	OPERATIONAL CONDITIONS AND F	RISK MANAGEMENT		
Section 2.1	Control of Worker Exposure			
<b>Product Characteristics</b>				
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 100% (unless stated differently).,			
Frequency and Duration of Use				
	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			
Laboratory activitiesPROC15	No other specific measures identified.			
CleaningPROC10	No other specific measures identified.			
Section 2.2	ection 2.2 Control of Environmental Exposure			
Substance is complex UVCE	b.			
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used	in region:	0,1		
Regional use tonnage (tonnes/year):		2,0E-01		
Fraction of Regional tonnage	e used locally:	1		
Annual site tonnage (tonnes/year):		2,0E-01		
Maximum daily site tonnage (kg/day):		1,0E+01		
Frequency and Duration of	Use			
Continuous release.				
Emission Days (days/year):		20		
<b>Environmental factors not</b>	influenced by risk management			
Local freshwater dilution factor:		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):  Release fraction to soil from process (initial release prior to RMM):	1,0E-04	
chnical conditions and measures at process level (source) to prevent release		
Common practices vary across sites thus conservative process re-	- CVCIII ICICASC	
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		
sions and releases to soil	<b>J</b> ,	
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 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+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	local and/or regional	
regulations.	-	

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

# **Section 3.2 - Environment**

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

#### Section 4.2 - Environment

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

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

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

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**Exposure Scenario - Worker** 

30000000723	
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 RISK MANAGEMENT MEASURES			
Section 2.1	Control of Worker Exposure			
Product Characteristics	Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP			
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,			
Frequency and Duration of Use				
Covers daily exposures up to 8 hours (unless stated differently).				
Other Operational Conditions affecting Exposure				
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.				

Contributing Scenarios **Risk Management Measures** Drum/batch transfersPROC8a No other specific measures identified. Transfer from/pouring from con-No other specific measures identified. tainersPROC9 Filling/ preparation of equipment No other specific measures identified. from drums or containers.PROC9 General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 Operation of equipment contain-No other specific measures identified. ing engine oils and similar.(closed systems)PROC20 Operation of equipment contain-No other specific measures identified. ing engine oils and similar. Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC20 Remanufacture of reject arti-No other specific measures identified.

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clesPROC9		
Equipment maintenance- No other specific measures identified		d.
PROC8a Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2		
·	ontrol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		0.4
Fraction of EU tonnage used in re		0,1
Regional use tonnage (tonnes/ye		7
Fraction of Regional tonnage use		5,0E-04
Annual site tonnage (tonnes/year		5,0E-04
Maximum daily site tonnage (kg/d		1,4E-03
Frequency and Duration of Use	<b>)</b>	
Continuous release.		005
Emission Days (days/year):		365
Environmental factors not influ	lenced by risk management	1.0
Local freshwater dilution factor:		10
Local marine water dilution factor		100
	affecting Environmental Exposure	5.05.00
Release fraction to air from proce		5,0E-02
Release fraction to wastewater fr	om process (initial release prior to	2,5E-02
Release fraction to soil from proc	ess (initial release prior to RMM):	2,5E-02
Technical conditions and meas	sures at process level (source) to pr	event release
Common practices vary across si lease estimates used.	ites thus conservative process re-	
Technical onsite conditions an	d measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental exposur		
No wastewater treatment require		
Treat air emission to provide a ty		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.	overthingt release from site	
Organisational measures to pro		
Do not apply industrial sludge to Sludge should be incinerated, co	natural soils. ntained or reclaimed.	
Conditions and Measures relat	ed to municipal sewage treatment p	lant
	m wastewater via domestic sewage	94,6
treatment (%) Total efficiency of removal from v	vastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs		6.95.01
total wastewater treatment remov	(MSafe) based on release following val (kg/d)	6,8E-01
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03
Conditions and Measures related to external treatment of waste fo		
	of waste should comply with applicable	
•		<u> </u>

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regulations.

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

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

#### SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

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

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

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

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

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

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

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

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Exposure oceriano - worker		
30000000722		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Functional Fluids- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9 Environmental Release Categories: ERC7, ESVOC SpERC 7.13a.v1	
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics	Control of Worker Exposure	
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	in 20°C above ambient temperature (unless stated differently).	
Assumes a good basic stand	ard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.	
Drum/batch transfer- sPROC8b	No other specific measures identified.	
Filling of arti- cles/equipment(closed sys- tems)PROC9	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC8a	No other specific measures identified.	
General exposures (closed systems)PROC2	No other specific measures identified.	
General exposures (open systems)PROC4	No other specific measures identified.	
Remanufacture of reject articlesPROC9	No other specific measures identified.	
Equipment maintenance- PROC8a	No other specific measures identified.	
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		1	
Fraction of Regional tonnage		1	
Annual site tonnage (tonnes/		3,0	
Maximum daily site tonnage		5,0E+01	
Frequency and Duration of		- /	
Continuous release.			
Emission Days (days/year):		20	
	influenced by risk management	1 = 0	
Local freshwater dilution fact		10	
Local marine water dilution fa		100	
	ns affecting Environmental Exposure	100	
	rocess (initial release prior to RMM):	5,0E-03	
	er from process (initial release prior to	3,0E-05	
RMM):	or from process (initial release prior to	0,02 00	
,	process (initial release prior to RMM):	1,0E-03	
	neasures at process level (source) to pro-		
Common practices vary across sites thus conservative process re- lease estimates used.			
	s and measures to reduce or limit disch	arges air emis-	
sions and releases to soil		argoo, arronno	
	osure is driven by freshwater.		
	Prevent discharge of undissolved substance to or recover from onsite		
wastewater.			
No wastewater treatment req	uired.		
	a typical removal efficiency of (%)	0	
	or to receiving water discharge) to provide	0	
the required removal efficience			
	wage treatment plant, no secondary	0	
wastewater treatment require			
Organisational measures to	prevent/limit release from site		
Do not apply industrial sludge	e to natural soils.		
Sludge should be incinerated			
<b>Conditions and Measures r</b>	elated to municipal sewage treatment p	lant	
Estimated substance remova	Il from wastewater via domestic sewage	94,6	
treatment (%)			
Total efficiency of removal from	om wastewater after onsite and offsite	94,6	
(domestic treatment plant) R	, ,		
	age (MSafe) based on release following	2,4E+04	
total wastewater treatment re			
Assumed domestic sewage t		2,0E+03	
	elated to external treatment of waste for		
	sal of waste should comply with applicable	local and/or regional	
regulations.			

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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		
30000000715		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as a fuel- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1	
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	

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

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

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

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Regional use tonnage (tonnes/year):	2,4E+02		
Fraction of Regional tonnage used locally:	5,0E-04		
Annual site tonnage (tonnes/year):	1,2E-01		
Maximum daily site tonnage (kg/day):	3,3E-01		
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 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 (%)	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	1,6E+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	<sup>·</sup> 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 generated.			

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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30000000714	
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 RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Sc	enarios	Ris	sk Management Measures	
Bulk transfersDetyPROC8b	dicated facili-		No other specific measures identified.	
Drum/batch trans facilityPROC8b	fersDedicated	d	No other specific measures identified.	
General exposure systems)PROC1		23	No other specific measures identified.	
Use as a fuel(clotems)PROC16	sed sys-		No other specific measures identified.	
Equipment clean maintenancePRC	•		No other specific measures identified.	
Storage.PROC1F	PROC2		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	1,6E+02		
Fraction of Regional tonnage used locally:			

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

# ShellSol A150 ND

Version Revision Date: SDS Number: Date of last issue: 28.03.2023

Maximum daily site tonnage (kg/day): 7,8E+03  Frequency and Duration of Use  Continuous release.   100  Emission Days (days/year): 100  Environmental factors not influenced by risk management  Local freshwater 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  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 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.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant  Estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06  total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  2,0E+03  Conditions and Measures related to external treatment of waste for disposal  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	nnes/year): 1,6E+02
Continuous release.   100	
Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Dother 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):  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.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06  total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  2,0E+03  Comditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	
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 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):  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.  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 >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater via domestic sewage freatment plant RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06  total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in reg	
Environmental factors not influenced by risk management  Local freshwater 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  RMM): 1,0E-05  RMM): 0  Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process release estimates used. 1,0E-05  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. No wastewater treatment required. 1,0E-05  Treat air emission to provide a typical removal efficiency of (%) 95  Treat onsite wastewater (prior to receiving water discharge) to provide 0 the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. 0  Organisational measures to prevent/limit release from site 1  Do not apply industrial sludge to natural soils. 1  Sludge should be incinerated, contained or reclaimed. 1  Conditions and Measures related to municipal sewage treatment plant 1  Estimated substance removal from wastewater via domestic sewage 1  Festimated substance removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06  total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessment.	ear): 100
Local freshwater 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 RMM): 1,0E-05 RMM): 1,0E-05 RMM): 0  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 and measures to reduce or limit discharges, air emissions 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 >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06 total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	
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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.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following domestic reatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	nditions affecting Environmental Exposure
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Rease estimates used.	and measures at process level (source) to prevent release
Risk from environmental exposure is driven by freshwater sediment.  No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)  Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)  If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.  Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06 total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	y across sites thus conservative process re-
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Organisational measures to prevent/limit release from site  Do not apply industrial sludge to natural soils.  Sludge should be incinerated, contained or reclaimed.  Conditions and Measures related to municipal sewage treatment plant  Estimated substance removal from wastewater via domestic sewage 94,6  treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following 2,7E+06  total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03  Conditions and Measures related to external treatment of waste for disposal  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	
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Conditions and Measures related to municipal sewage treatment plant  Estimated substance removal from wastewater via domestic sewage treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	•
Estimated substance removal from wastewater via domestic sewage  treatment (%)  Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)  Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)  Assumed domestic sewage treatment plant flow (m3/d)  Conditions and Measures related to external treatment of waste for disposal  Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	
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Conditions and Measures related to external treatment of waste for disposal Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	
Combustion emissions limited by required exhaust emission controls.  Waste combustion emissions considered in regional exposure assessment.	vage treatment plant flow (m3/d) 2,0E+03
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	limited by required exhaust emission controls.
Conditions and incasures related to external recovery or waste	ures related to external recovery of waste
This substance is consumed during use and no waste of substance is generated.	

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

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

### ShellSol A150 ND

Version Revision Date: SDS Number: Date of last issue: 28.03.2023

3.3 24.11.2023 800001007477 Print Date 01.12.2023

#### Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

#### Section 4.2 - Environment

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

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

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

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

# ShellSol A150 ND

Version Revision Date: SDS Number: Date of last issue: 28.03.2023

3.3 24.11.2023 800001007477 Print Date 01.12.2023

Exposure ocenano - worker		
30000000711		
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 containersPROC8a	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.		

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

# ShellSol A150 ND

Version Revision Date: SDS Number: Date of last issue: 28.03.2023

Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region:	0,1	
Regional use tonnage (tonnes/year):	9,0E+02	
Fraction of Regional tonnage used locally:	2,0E-03	
Annual site tonnage (tonnes/year):	1,8	
Maximum daily site tonnage (kg/day):	4,9	
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):	1,02 02	
Release fraction to soil from process (initial release prior to RMM):	9,0E-02	
Technical conditions and measures at process level (source) to pro		
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharge	arges, air emis-	
sions and releases to soil	<b>.</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	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	1,4E+03	
total wastewater treatment removal (kg/d)	1,12100	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for		
External treatment and disposal of waste should comply with applicable		
regulations.		
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 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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3000000706		
272712111		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as binders and release agents- Professional	
Use Descriptor	Sector of Use: SU22	
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 14 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1	
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.	

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

Contributing Scenarios	Risk Management Measures	
Material transfers(closed systems)PROC1PROC2PROC3	No other specific measures identified.	
Drum/batch transfersPROC8b	No other specific measures identified.	
Mixing operations (closed sys tems)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 elevated temperature (> 20°C above ambient temperature).PROC6		
SprayingMachinePROC11	Minimise exposure by extracted full enclosure for the operation or equipment.	

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O IDD 0044	On the Control of the state of	(	
SprayingManualPROC11	Carry out in a vented booth or extract	ted enclosure.	
	, or:	I 40 with Tune A filter or	
	Wear a respirator conforming to EN1 better.	140 with Type A litter or	
	Detter.		
ManualRolling, Brush-	No other specific measures identified	<u> </u>	
ingPROC10	The same opening measures resimined		
Storage.PROC1PROC2	Store substance within a closed syst	em.	
	,		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used i	in region:	0,1	
Regional use tonnage (tonnes	s/year):	100	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/y		5,0E-02	
Maximum daily site tonnage (		0,14	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
	nfluenced by risk management		
Local freshwater dilution factor		10	
Local marine water dilution fa		100	
	ns 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 RMM):		2,5E-02	
,		2,5E-02	
Technical conditions and m	easures 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		1	
Risk from environmental expo	•		
No wastewater treatment requ			
-	a typical removal efficiency of (%)	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	
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.			
Siddge should be inclinerated,	contained of reclaimed.		
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) RMMs (%)			
	age (MSafe) based on release following	65	

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total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03

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

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

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

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

# SECTION 3 EXPOSURE ESTIMATION Section 3.1 - Health

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

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

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

### Section 4.1 - Health

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

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

#### Section 4.2 -Environment

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

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

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

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30000000702		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as binders and release agents- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 7, PROC 8b, PROC 10, PROC 13, PROC 14 Environmental Release Categories: ERC4, ESVOC SpERC 4.10a.v1	
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), and handling of waste.	

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

Contributing Scenarios	Risk Management Measures
Material transfers(closed sys-	No other specific measures identified.
tems)PROC1PROC2PROC3	
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	0
SprayingMachinePROC7	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

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SprayingManualPROC7	Carry out in a vented booth or extract, or: Avoid carrying out activities involving 4 hours	
ManualRolling, BrushingPROC	No other specific measures identified.	
Dipping, immersion and pour- No other specific measures identified		d.
ingPROC13 Storage.PROC1PROC2	Store substance within a closed syst	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/		9,6E+01
Fraction of Regional tonnage u		1
Annual site tonnage (tonnes/ye		9,6E+01
Maximum daily site tonnage (k		4,8E+03
Frequency and Duration of U		+,0∟100
Continuous release.	<u> </u>	
Emission Days (days/year):		20
	fluenced by risk management	20
Local freshwater dilution factor		10
Local marine water dilution fac		100
Other Operational Conditions affecting Environmental Exposure		1.00
	cess (initial release prior to RMM):	1,0
	from process (initial release prior to	3,0E-06
RMM):	р (	
	ocess (initial release prior to RMM):	0
	easures at process level (source) to pr	event release
	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 expos		
	ed substance to or recover from onsite	
wastewater.		
No wastewater treatment requi		
	typical removal efficiency of (%)	80
	to receiving water discharge) to provide	0
the required removal efficiency		
	age treatment plant, no secondary	0
wastewater treatment required		<u> </u>
	prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures rel	ated to municipal sewage treatment p	lant

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Estimated substance removal from wastewater via domestic sewage	94,6
Total efficiency of removal from wastewater after onsite and offsite	94,6
(domestic treatment plant) RMMs (%)	94,0
Maximum allowable site tonnage (MSafe) based on release following	1,9E+06
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 waste for	r dienocal

#### 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	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** 

30000000701	
300000000701	
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 Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8bPROC9	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Non-dedicated facilityPROC8aPROC5	
Process samplingPROC8b	No other specific measures identified.
Metal machining operationsPROC17	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).

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Maria IDallia a David	No. of the Co.	1
ManualRolling, Brush-	No other specific measures identified	<b>d.</b>
ingPROC10	Miniming averagure by partial analog	ure of the energtion or
SprayingPROC11	Minimise exposure by partial enclose equipment and provide extract ventile	
	, or:	ation at openings.
	Wear a respirator conforming to EN	140 with Type A/P2 filter
	or better.	110 Will Type 7 (1 2 Illie)
Treatment by dipping and pour	- No other specific measures identified	d.
ingPROC13	'	
Equipment cleaning and	No other specific measures identified	d.
maintenanceNon-dedicated		
facilityPROC8a		
Equipment cleaning and	No other specific measures identified	d.
maintenanceDedicated facili-		
tyPROC8b		
Storage.PROC1PROC2	Store substance within a closed syst	tem.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.	-	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in	n region:	0,1
Regional use tonnage (tonnes		5
Fraction of Regional tonnage u	ised locally:	5,0E-04
Annual site tonnage (tonnes/ye	ear):	2,5E-03
Maximum daily site tonnage (k	g/day):	6,8E-03
Frequency and Duration of U	Jse	
Continuous release.		
Emission Days (days/year):		365
	fluenced by risk management	
Local freshwater dilution factor		10
Local marine water dilution fac		100
	s affecting Environmental Exposure	
	ocess (initial release prior to RMM):	0,15
	r from process (initial release prior to	5,0E-02
RMM):		
	ocess (initial release prior to RMM):	5,0E-02
	easures at process level (source) to pr	event release
	s sites thus conservative process re-	
lease estimates used.	and magazines to reduce an limit disab	
sions and releases to soil	and measures to reduce or limit disch	arges, air emis-
Risk from environmental expos	cure is driven by freshwater	
No wastewater treatment requ		
	typical removal efficiency of (%)	0
	to receiving water discharge) to provide	0
the required removal efficiency	0 , ,	
	age treatment plant, no secondary	0
wastewater treatment required		
and the second s		

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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	plant
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	3,4
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	r 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	

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** 

30000000697	
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 Condition	ons 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 systems)PROC1PROC2PRO	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.PROC8b	ent No other specific measures identified.
Filling/ preparation of equipme from drums or containers.PROC5	ent No other specific measures identified.
Filling/ preparation of equipme from drums or containers.PROC9	ent No other specific measures identified.

lease estimates used.

sions and releases to soil

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Process samplingPROC8b		No other specific measures identifi	ed.
· -			
Metal machining opera-		No other specific measures identifi	ed.
tionsPROC17 Treatment by dipping and p	OUr-	No other specific measures identifi	
ingPROC13	oui-	140 other specific measures identifi	eu.
SprayingPROC7		Minimise exposure by partial enclo	sure of the operation o
		equipment and provide extract ven	tilation at openings.
ManualRolling, Brush-		No other specific measures identifi	ed.
ingPROC10			
Automated metal roll-	J	No other specific measures identifi	ed.
ing/formingUse in contained systemsOperation is carried			
at elevated temperature (>			
above ambient tempera-	_0 0		
ture).PROC2			
Semi-automated metal roll-		Minimise exposure by partial enclo	
ing/formingOperation is car		equipment and provide extract ven	tilation at openings.
out at elevated temperature			
20°C above ambient tempe	ra-		
ture).PROC17 Equipment cleaning and		No other specific measures identifi	
maintenancePROC8aPRO	C8h	No other specific measures identifi	eu.
Storage.PROC1PROC2	300	Store substance within a closed sy	stem.
g			
Section 2.2		entrol of Environmental Exposure	
Substance is complex UVC			
Predominantly hydrophobic			
Amounts Used	al !aa aa		0.4
Fraction of EU tonnage use			0,1 1,0E+01
Regional use tonnage (tonnage) Fraction of Regional tonnage			1,0=+01
Annual site tonnage (tonne			1,0E+01
Maximum daily site tonnage			5,0E+02
Frequency and Duration of			0,02.02
Continuous release.			
Emission Days (days/year):			20
		enced by risk management	
Local freshwater dilution factor:			10
Local marine water dilution factor:			100
		iffecting Environmental Exposure	T 0 0 = 00
		ess (initial release prior to RMM):	2,0E-02
RMM):		om process (initial release prior to	3,0E-05
		ess (initial release prior to RMM):	0
		sures at process level (source) to p	prevent release
Common practices vary acr	oss si	tes thus conservative process re-	
loogo ootimotee used			1

Technical onsite conditions and measures to reduce or limit discharges, air emis-

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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
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	
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 (%)	0.05.05
Maximum allowable site tonnage (MSafe) based on release following	2,0E+05
total wastewater treatment removal (kg/d)	0.05.00
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	•
External treatment and disposal of waste should comply with applicable	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.	iocai anu/oi regionai
regulations.	

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

indicated.

# Section 3.2 - Environment

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

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

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

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

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

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

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20000000000	
30000000694	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- ProfessionalHigh Environmental Release
Use Descriptor	Sector of Use: SU22
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEM MEASURES	MENT
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 s differently).,	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 sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.	
Operation of equipment conta engine oils and similar.PROC	_	No other specific measures identified.	
General exposures (open systems)PROC4	-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers. Dedicated facility PROC8b		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 energy open equipmentOut-doorPROC17	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures identified.
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b	Drain or remove substance from equipment prior to break- in or maintenance.
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	Drain or remove substance from equipment prior to break- in or maintenance.
Engine lubricant servicePROC9	No other specific measures identified.
ManualRolling, BrushingPROC10	No other specific measures identified.
SprayingPROC11	Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better.
Treatment by dipping and pour-ingPROC13	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	<b>Control of Environmental Exposure</b>		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	2,0	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/	year):	1,0E-03	
Maximum daily site tonnage (kg/day):		2,7E-03	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	nfluenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Condition	ns 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		5,0E-02	
Release fraction to soil from process (initial release prior to RMM): 5,0E-02		5,0E-02	

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Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	1
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	1,4
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	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	local and/or regional
regulations.	<b>5</b> * **

SECTION 3	EXPOSURE ESTIMATION		
Section 3.1 - Health			
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.			
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 decriario Worker		
3000000692			
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 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 R	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
Operation of equipment containing engine oils and similar.PROC20	
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipmen from drums or containers.Dedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipmentrom drums or containers.Non-dedicated facilityPROC8a	No other specific measures identified.
Operation and lubrication of high energy open equipmentIndoorPROC17PROC18	Restrict area of openings to equipment.

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Operation and lubrication of high energy open equipmentOut-doorPROC17	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours	
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures identified.	
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b	Drain down system prior to equipment opening or maintenance.	
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	Drain down system prior to equipment opening or maintenance.	
Engine lubricant servicePROC9	No other specific measures identified.	
ManualRolling, BrushingPROC10	No other specific measures identified.	
SprayingPROC11	Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Treatment by dipping and pour-ingPROC13	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	

Section 2.2	<b>Control of Environmental Exposure</b>			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used in region:		0,1		
Regional use tonnage (tonnes/year):		2,0E+00		
Fraction of Regional tonnage used locally:		5,0E-04		
Annual site tonnage (tonnes/year):		1,0E-03		
Maximum daily site tonnage (kg/day):		2,7E-03		
Frequency and Duration of Use				
Continuous release.				
Emission Days (days/year):		365		
Environmental factors not influenced by risk management				
Local freshwater dilution factor	or:	10		
Local marine water dilution factor:		100		
Other Operational Conditions affecting Environmental Exposure				
Release fraction to air from process (initial release prior to RMM):		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-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 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)	1,4
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.	local and/or regiona
Conditions and measures related to external recovery of waste  External recovery and recycling of waste should comply with applicable	

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

#### Section 3.2 -Environment

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 r	nanaged 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** 

Exposure occination Worker	
3000000691	
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 identifie	<u>d</u>
ingPROC10	The earler openine measures lacritime	u.
Treatment by dipping and pour- ingPROC13	No other specific measures identifie	d.
SprayingPROC7	Minimise exposure by partial enclos equipment and provide extract venti	
Maintenance (of larger plant items) and machine set up-PROC8b	No other specific measures identifie	
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC8b		ed ventilation (10 to 15 air
Maintenance of small itemsPROC8a	No other specific measures identifie	d.
Remanufacture of reject articlesPROC9	No other specific measures identifie	d.
Storage.PROC1PROC2	Store substance within a closed sys	tem.
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/		5,6E+01
Fraction of Regional tonnage us		1
Annual site tonnage (tonnes/ye		5,6E+01
Maximum daily site tonnage (kg		2,8E+03
Frequency and Duration of U		_,-,-
Continuous release.		
Emission Days (days/year):		20
Environmental factors not inf	luenced by risk management	
Local freshwater dilution factor:	<u> </u>	10
Local marine water dilution fact	or:	100
	affecting Environmental Exposure	
Release fraction to air from pro-	cess (initial release prior to RMM):	5,0E-03
	from process (initial release prior to	3,0E-05
	ocess (initial release prior to RMM):	1,0E-03
	asures at process level (source) to pr	event release
	sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		arges, air emis-
sions and releases to soil		
Risk from environmental exposure is driven by freshwater sediment.		
	ed substance to or recover from onsite	
wastewater.		
No wastewater treatment require		70
I reat air emission to provide a	typical 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.		

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

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

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

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

SECTION 4	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.

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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 - Work	GI
3000000690	
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	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	ns affecting Exposure
Assumes use at not more that	in 20°C above ambient temperature (unless stated differently).
Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures
Bulk transfersDedicated	No other specific measures identified.
facilityPROC8b	
Filling/ preparation of	No other specific measures identified.
equipment from drums or	
containers.Dedicated facili-	
tyPROC8b	
Drilling mud (re-	No other specific measures identified.
)formulationPROC3	
Drill floor operationsPROC4	No other specific measures identified.
Operation of solids filtering	No other specific measures identified.
equipment - vapour expo-	·
suresPROC4	
Cleaning of solids filtering	No other specific measures identified.
equipmentPROC8a	
Treatment and disposal of	No other specific measures identified.
filtered solidsPROC3	

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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 pre	esented 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

Qualitative approach used to conclude safe use.

SECTI	ON 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Soctio	n 4.1 - Hoolth	

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

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

#### Section 4.2 - Environment

No exposure assessment presented for the environment.

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**Exposure Scenario - Worker** 

30000000689	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

SECTION 2	OPERATIONAL CONDITIONS AND RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
<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 o	f Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless dard of occupational hygiene is implemented	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures

Filling/ preparation of equipment from drums or contain-

ers.Dedicated facilityPROC8b  Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a  Automated process with (semi) closed systems.Use in contained systemsPROC2  Automated process with (semi) closed systems.Drum/batch transfersUse in contained systemsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)PROC4  No other specific measures identified.  No other specific measures identified.  No other specific measures identified.	from drums or contain-	
from drums or containers.Non- dedicated facilityPROC8a  Automated process with (semi) closed systems.Use in contained systemsPROC2  Automated process with (semi) closed systems.Drum/batch trans- fersUse in contained sys- temsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.  No other specific measures identified.	ers.Dedicated facilityPROC8b	
dedicated facilityPROC8a  Automated process with (semi) closed systems.Use in contained systemsPROC2  Automated process with (semi) closed systems.Drum/batch trans- fersUse in contained sys- temsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.  No other specific measures identified.	Filling/ preparation of equipment	No other specific measures identified.
Automated process with (semi) closed systems.Use in contained systemsPROC2  Automated process with (semi) closed systems.Drum/batch transfersUse in contained systemsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.  No other specific measures identified.  No other specific measures identified.	from drums or containers.Non-	
closed systems.Use in contained systemsPROC2  Automated process with (semi) closed systems.Drum/batch transfersUse in contained systemsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.  No other specific measures identified.	dedicated facilityPROC8a	
SystemsPROC2  Automated process with (semi) closed systems.Drum/batch transfersUse in contained systemsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.  No other specific measures identified.	Automated process with (semi)	No other specific measures identified.
Automated process with (semi) closed systems.Drum/batch trans- fersUse in contained sys- temsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.  No other specific measures identified.	closed systems.Use in contained	
closed systems.Drum/batch trans- fersUse in contained sys- temsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.	systemsPROC2	
fersUse in contained systemsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-	Automated process with (semi)	No other specific measures identified.
temsPROC3  Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.	closed systems.Drum/batch trans-	
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod-  No other specific measures identified.	fersUse in contained sys-	
Semi automatic application of floor care and maintenance prod-	temsPROC3	
care and maintenance prod-	Semi Automated process. (e.g.:	No other specific measures identified.
·	Semi automatic application of floor	
ucts)PROC4	care and maintenance prod-	
	ucts)PROC4	

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Filling/ preparation of equipment from drums or containers.PROC8a	No other specific measures identified.
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	Provide enhanced general ventilation by mechanical means. Limit the substance content in the product to 25 %.
Cleaning with high pressure washersSprayingOutdoorPROC11	Ensure operation is undertaken outdoors. 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):	6,0E-01
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/y	/ear):	3,0E-04
Maximum daily site tonnage (		8,2E-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		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		,
Release fraction to air from p	rocess (initial release prior to RMM):	2,0E-02
Release fraction to wastewater from process (initial release prior to RMM):		1,0E-06
Release fraction to soil from process (initial release prior to RMM): 0		0
Technical conditions and measures at process level (source) to prevent release		prevent release
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		charges, air emis-

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sions and releases to soil		
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 94,6 (domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	4,1E-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 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
OLOTION	EXI GOOKE EGTIMATION
Section 3.1 - Health	
The FORTON TRACE II and the second of the second se	

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

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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** 

3000000688	
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	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 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 transfersPROC3 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 Degreasing small objects in No other specific measures identified.

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cleaning stationPROC13		
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	Avoid carrying out operation for mo	ore than 1 hour.
	, or:	
	Wear a respirator conforming to El better.	N140 with Type A filter o
ManualSurfacesCleaningPROC10	No other specific measures identifi	ed
	·	
Storage.PROC1	Store substance within a closed sy	rstem.
Section 2.2 Cont	trol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in regi	ion:	0,1
Regional use tonnage (tonnes/year		1,7E+02
Fraction of Regional tonnage used		5,9E-01
Annual site tonnage (tonnes/year):	•	100
Maximum daily site tonnage (kg/day	y):	5,0E+03
Frequency and Duration of Use		·
Continuous release.		
Emission Days (days/year):		20
<b>Environmental factors not influer</b>	nced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions afford	ecting Environmental Exposure	
Release fraction to air from process	(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.		
Technical onsite conditions and sions and releases to soil	measures to reduce or limit disch	arges, air emis-
	e driven by freshwater	
Risk from environmental exposure in Prevent discharge of undissolved so		
wastewater.	ubstance to or recover from onsite	
No wastewater treatment required.		
Treat air emission to provide a typic	cal removal efficiency of (%)	70
Treat onsite wastewater (prior to re-		0
the required removal efficiency of >	3 , ,	
If discharging to domestic sewage t		0
wastewater treatment required.		
Organisational measures to prev		
Do not apply industrial sludge to na		
Sludge should be incinerated, conta	ained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	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	2,0E+06	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	

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

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

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

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

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

indicated.

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

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

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

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

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

#### Section 4.2 - Environment

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

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

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

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**Exposure Scenario - Worker** 

30000000686	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

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

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

Contributing Scenarios	Risk Management Measures
General exposures (closed sy tems)PROC1	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 applicationUse in contained batch processesPROC3	No other specific measures identified.
Film formation - air dryingPRO	No other specific measures identified.
Preparation of material for apparationPROC5	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 operation for more than 4 hours. , or: Limit the substance content in the product to 5 %.
	, or: Wear a respirator conforming to EN140 with Type A filter or better.
Dipping, immersion and pour- ingPROC13	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	<b>Control of Environmental Exposure</b>	)
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	2,2E+02
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/)	/ear):	1,1E-01
Maximum daily site tonnage (kg/day):		3,0E-01
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor	or:	10
Local marine water dilution fa	ctor:	100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from pr	rocess (initial release prior to RMM):	0,98

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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 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.	
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	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)	1,4E+02
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 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		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

#### Section 4.2 - Environment

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

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

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

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**Exposure Scenario - Worker** 

Exposure Scenario - WC	51 KG
30000000683	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Industrial
Use Descriptor	Sector of Use: SU3
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 14, PROC 15 Environmental Release Categories: ERC4, ESVOC SpERC 4.3a.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
	in 20°C above ambient temperature (unless stated differently).	
Assumes a good basic stand	ard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
General exposures (closed systems)PROC1	No other specific measures identified.	
General exposures (closed systems)with sample collectionUse in contained systemsPROC2	No other specific measures identified.	
Film formation - force dry- ing, stoving and other tech- nologies.(closed sys- tems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2	No other specific measures identified.	
Mixing operations (closed systems)PROC3	No other specific measures identified.	

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Film formation - air dry- ingPROC4	No other specific measures identified.	
Preparation of material for	No other specific measures identified.	
applicationMixing opera-		
tions (open sys-		
tems)PROC5		
Spraying (automat-ic/robotic)PROC7	Carry out in a vented booth provided with	laminar airflow.
ManualSprayingPROC7	Carry out in a vented booth provided with	laminar airflow.
	, or:	
	Wear a respirator conforming to EN140 w	vith Type A filter or
	better.	
Material transfersNon-	No other specific measures identified.	
dedicated facilityPROC8a	The other specific measures identified.	
Material transfersDedicated	No other specific measures identified.	
facilityPROC8b	,	
Roller, spreader, flow appli-	No other specific measures identified.	
cationPROC10	·	
Dipping, immersion and	No other specific measures identified.	
pouringPROC13		
Laboratory activi-	No other specific measures identified.	
tiesPROC15		
Material trans-	No other specific measures identified.	
fersDrum/batch transfer-		
sTransfer from/pouring from		
containersPROC9	No other specific measures identified.	
Production or preparation or articles by tabletting,	No other specific measures identified.	
compression, extrusion or		
pelletisationPROC14		
Equipment cleaning and	No other specific measures identified.	
maintenancePROC8a	, , , , , , , , , , , , , , , , , , ,	
Storage.PROC1	Store substance within a closed system.	
-	-	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Amounts Used		
		0,1
Regional use tonnage (tonnes/year):		1,7E+03
Fraction of Regional tonnage used locally:		1
Annual site tonnage (tonnes/		1,7E+03
Maximum daily site tonnage (kg/day): 1,7E+04		1,/E+04
Frequency and Duration of	Use	
Continuous release.		400
Emission Days (days/year):	mflamaad b wiele maarra arrans and	100
	nfluenced by risk management	40
Local freshwater dilution factor Local marine water dilution factor		10
i i ocal marine water dillition ta	ICIOI .	100
	ns affecting Environmental Exposure	

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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 pro-	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
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	87,8
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 (%)	0 1,0
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	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	
External treatment and disposal of waste should comply with applicable	
regulations.	· ·
One Pilland and Indiana and In	
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.	een 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.

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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** 

30000000681	
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 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 F	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Batch processes at elevated temperaturesOperation is carried out at elevated 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

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temaji recos		
ManualTransfer from/pouring from containersNon-dedicated	No other specific measures identified	i.
facilityPROC8a	Nigoria de la constanta de Cons	1
Drum/batch transfersDedicated	No other specific measures identified	1.
facilityPROC8b	Night of the second of the control o	<u> </u>
Production or preparation or	No other specific measures identified	1.
articles by tabletting, compres-		
sion, extrusion or pelletisa-		
tionPROC14	No other execitions course identifies	
Drum and small package fill-ingPROC9	No other specific measures identified	λ.
Equipment cleaning and	No other specific measures identified	1
maintenancePROC8a	No other specific measures identified	J.
Storage.PROC1PROC2	Store substance within a closed syst	<u> </u>
Storage.FROCTFROC2	Store substance within a closed syst	GIII.
Section 2.2 Co	ontrol 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		5,1E+02
Fraction of Regional tonnage use		1
Annual site tonnage (tonnes/year		5,1E+02
Maximum daily site tonnage (kg/e		5,1E+03
Frequency and Duration of Use		,
Continuous release.		
Emission Days (days/year):		100
Environmental factors not influ	enced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor	r:	100
Other Operational Conditions a	affecting Environmental Exposure	
Release fraction to air from proce		1,0E-02
	om process (initial release prior to	2,0E-04
RMM):		
	cess (initial release prior to RMM):	1,0E-04
Technical conditions and meas	sures at process level (source) to pro	event release
Common practices vary across s	ites thus conservative process re-	
lease estimates used.		
	d measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
	e 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		0
	receiving water discharge) to provide	0
the required removal efficiency o		
If discharging to domestic sewag	e treatment plant, no secondary	0
wastewater treatment required.		
Organisational measures to pr	event/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	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	1,3E+05	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	

#### Conditions and Measures related to external treatment of waste 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 3.1 - Health

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

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

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

SECTION 4	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE</b>
	EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

#### Section 4.2 -Environment

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

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

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

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**Exposure Scenario - Worker** 

Exposure Scenario - Wor	NO!		
30000000678			
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 distribu-		
	tion and associated laboratory activities.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	f Use		
Covers daily exposures up	o 8 hours (unless stated differently).		
Other Operational Conditi	ons affecting Exposure		
	nan 20°C above ambient temperature (unless stated differently	/).	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified. 3
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC3	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Drum and small package fill-ingPROC9	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

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Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		.1
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes		1
Fraction of Regional tonnage used locally:		2E-03
Annual site tonnage (tonnes/y		2,0E-03
Maximum daily site tonnage (		150
Frequency and Duration of		100
Continuous release.		T
Emission Days (days/year):		20
	nfluenced by risk management	120
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	100
•	ocess (initial release prior to RMM):	1,0E-03
	er from process (initial release prior to	1,0E-05
RMM):	in frocess (initial release prior to	1,00-05
,	rocess (initial release prior to RMM):	1,0E-05
	easures at process level (source) to pr	
	s sites thus conservative process re-	- Telease
lease estimates used.	s sites thus conservative process re-	
	and measures to reduce or limit disch	arge air emis-
sions and releases to soil	and measures to reduce or minit discir	arges, air eims-
Risk from environmental expo	sure is driven by freshwater	T
No wastewater treatment requ		_
	a typical removal efficiency of (%)	90
	to receiving water discharge) to provide	0
the required removal efficience		
	/age treatment plant, no secondary	0
wastewater treatment required		Ŭ
	prevent/limit release from site	.1
Do not apply industrial sludge		
Sludge should be incinerated,		
Gradge cricara se memeratea,	oomanioa or roomanioa.	
Conditions and Measures re	elated to municipal sewage treatment p	lant
	from wastewater via domestic sewage	94,6
treatment (%)	ge	0 1,0
	m wastewater after onsite and offsite	94,6
(domestic treatment plant) RN		,-
	age (MSafe) based on release following	5,0E+01
total wastewater treatment ren		,
Assumed domestic sewage tr		2,0E+03
	elated to external treatment of waste fo	
	al of waste should comply with applicable	
		2. 2. 2. 2. 2. 2 <b></b>
regulations.		

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regulations.

#### Section 3.1 - Health

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

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

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

# SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

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

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

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

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

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

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

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**Exposure Scenario - Worker** 

20000000000	•		
30000000677			
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 ma-		
	rine vessel/barge, road/rail car and bulk container), sampling		
	and associated laboratory activities.		
	·		

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

Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1PROC2PRO	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.
Section 2.2	Control of Environmental Exposure

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	T	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region:	0,1	
Regional use tonnage (tonnes/year):	6,0E+03	
Fraction of Regional tonnage used locally:	1	
Annual site tonnage (tonnes/year):	6,0E+03	
Maximum daily site tonnage (kg/day):	6,0E+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 RMM):	3,0E-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		
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>,</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	60,0	
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		
Estimated substance removal from wastewater via domestic sewage	94,6	
treatment (%)	04.0	
Total efficiency of removal from wastewater after onsite and offsite	94,6	
(domestic treatment plant) RMMs (%)	4.45.05	
Maximum allowable site tonnage (MSafe) based on release following	4,4E+05	
total wastewater treatment removal (kg/d)	4.05.04	
Assumed domestic sewage treatment plant flow (m3/d)	1,0E+04	
Conditions and Measures related to external treatment of waste for disposal		
During manufacturing no waste of the substance is generated.		
Conditions and measures related to external recovery of waste		
During manufacturing no waste of the substance is generated.		

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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 - Consumer** 

30000001100			
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 at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	mount up to (g):	13.800
covers skin contact area (cm2):		857,5
Frequency and Duration o	f Use	•
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Condition	ons affecting Exposure	<u>.</u>
Unless stated otherwise.	<u> </u>	

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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

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	Covers exposure up to 4 hours/event
	Covers use under typical household ventilation.
Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	Oovers concentrations up to 30 %
glue, wood parquet glue).	
	covers use up to 1 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	any are used up to C day/year
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85,05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	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 eveneurs up to 0.17 hours/event
Auti Fusses and de ising	Covers exposure up to 0,17 hours/event
Anti-Freeze and de-icing products Lock de-icer.	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-	Covers concentrations up to 5%
infectants, pest control) (excipient only). 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
Biocidal products (e.g. Dis-	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 %
Coddingo and painto, tillin	201010 Outloom and to 1,0 /0

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nore point removers We	T
ners, paint removers Waterborne latex wall paint.	
terborne latex wall paint.	covers use up to 4 day/year
	Covers use up to 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 %
Coatings and paints, thin- ners, paint removers Sol- vent rich, high solid, water borne paint.	Covers concentrations up to 27,5 %
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin- ners, paint removers Aero- sol spray can.	Covers concentrations up to 50 %
oor opray carr.	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, thinners, paint removers Removers (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 painti	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 9	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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ment products Removers	
(paint-, glue-, wall paper-,	
sealant-remover).	according 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	ар на об да
products Polishes, spray	
(furniture, shoes).	
(1000000)	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 concentrations up to 100 /0
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event

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Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	10.1
	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
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	
	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
<u> </u>	covers skin contact area up to (cm2): 857,50 cm2
	covers skin contact area up to (cm2): 857,50 cm2  For each use event, covers amount up to 115 g
	For each use event, covers amount up to 115 g

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

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Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	5,0E+01
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	2,5E-02
Maximum daily site tonnage (kg/day):	6,9E-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):	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	3,4E+01
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable al regulations.	

Conditions and measures related to external recovery of waste	Conditions	and measure	s related to e	xternal recove	ry of waste
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External recovery and recycling of waste should comply with applicable local and/or regional regulations.

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

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**Exposure Scenario - Consumer** 

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

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

Covers use in room size of 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	
	Covers use under typical household ventilation.	

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	Covers use in room size of 20 m3	
	Covers exposure up to 0,25 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
instant action (aerosol	Covers concentrations up to 30 /0	
sprays). pesticides (excipi-		
ent only).		
one only).	covers use up to 365 day/year	
	Covers use up to 4 times/day of use	
	For each use event, covers amount up to 5 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,25 hours/event	
Air care products Air care,	Covers concentrations up to 10 %	
continuous action (solid and liquid).	Covers concentrations up to 10 70	
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,70 cm2	
	For each use event, covers amount up to 0,48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8,00 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
continuous action (solid and liquid). pesticides (excipient only).		
y/.	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,70 cm2	
	For each use event, covers amount up to 0,48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8,00 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 1 %	
products Washing car window.		
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	For each use event, covers amount up to 0,5 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,02 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 10 %	
products Pouring into radiator.		
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428,00 cm2	
	For each use event, covers amount up to 2.000 g	

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	tion.
	Covers use in room size of 34 m3
<del></del>	Covers exposure up to 0,17 hours/event
Anti-Freeze and de-icing products Lock de-icer.	Covers concentrations up to 50 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
<u> </u>	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
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 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.

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covers exposure up to 0,17 hours/event covers concentrations up to 1,5 %  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 cor each use event, covers amount up to 2,760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond covers concentrations up to 27,5 %
overs use up to 4 day/year covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated.
covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event to specific risk management measure identified beyond nose operational conditions stated.
covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event to specific risk management measure identified beyond nose operational conditions stated.
covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event to specific risk management measure identified beyond nose operational conditions stated.
overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g overs use under typical household ventilation. overs use in room size of 20 m3 overs exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated.
or each use event, covers amount up to 2.760 g overs use under typical household ventilation. overs use in room size of 20 m3 overs exposure up to 2,2 hours/event o specific risk management measure identified beyond nose operational conditions stated.
covers use under typical household ventilation.  covers use in room size of 20 m3  covers exposure up to 2,2 hours/event  lo specific risk management measure identified beyond  nose operational conditions stated.
covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated.
overs exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated.
o specific risk management measure identified beyond nose operational conditions stated.
nose operational conditions stated.
overs concentrations up to 27,5 %
overs use up to 5 day/year
covers use up to 1 times/day of use
overs use up to 1 times/day of use
overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 744 g
overs use under typical household ventilation.
overs use in room size of 20 m3
overs exposure up to 2,2 hours/event
o specific risk management measure identified beyond
nose operational conditions stated.
covers concentrations up to 50 %
overs use up to 6 day/year
overs use up to 1 times/day of use
overs skin contact area up to (cm2): 428,75 cm2
or each use event, covers amount up to 744 g
overs use under typical household ventilation.
overs use in room size of 20 m3
overs exposure up to No specific risk management meas-
re identified beyond those operational conditions stated.
,33 hours/event
overs concentrations up to 50 %
overs use up to 3 day/year
covers use up to 1 times/day of use
overs skin contact area up to (cm2): 857,50 cm2
or each use event, covers amount up to 491 g
overs use under typical household ventilation.
covers use in room size of 20 m3
covers exposure up to 2,00 hours/event
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 ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
	covers use up to 10 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Washing and cleaning products (including solvent based products) Laundry 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
	Covers exposure up to 0,50 hours/event
Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
147 11 1 1 1	
Washing and cleaning	Covers concentrations up to 15 %

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based products) Cleaners, 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, 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 UVCB		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	1,0E-01
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	5,0E-05
Maximum daily site tonnage (	kg/day):	1,4E-04
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 factor:		100
	ns affecting Environmental Exposure	
	rocess (initial release prior to RMM):	0,95
Release fraction to wastewater from process (initial release prior to RMM):		2,5E-02
Release fraction to soil from process (initial release prior to RMM):		2,5E-02
Conditions and Measures related to municipal sewage treatment plant		
Risk from environmental expo	osure 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)		6,8E-02
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03
	elated to external treatment of waste fo	or disposal
External treatment and disposal regulations.	sal of waste should comply with applicable	e local and/or region-

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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 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** 

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30000001103	
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
	20100 op2110 olouit 1
Scope of process	Covers the consumer use of formulated lubricants in closed
Coope 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 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6.390
covers skin contact area (cm2): 468		468
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): 8		8
Other Operational Conditions affecting Exposure		
I I allowed a Control of the 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	Covere contentitutions up to 30 70
glue, wood parquet glue).	
giae, weed parduct giae).	covers use up to 1 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	Covers concentrations up to 50 70
пош эргау.	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
Adhasiyaa saalanta Caal	Covers concentrations up to 30 %
Adhesives, sealants Sealants.	Covers concentrations up to 50 %
ants.	covers use up to 365 day/year
	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
1.1.2	Avoid using when windows closed.
Lubricants, greases, re- lease products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
- 1	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.	22.2.2 23.132.11.3.13.13 ap 10 30 /0
	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
Polishes and wax blends Polishes, wax / cream	Covers concentrations up to 50 %
(floor, furniture, shoes).	
(1001, Turriture, Sirece).	covers use up to 29 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Cleaners, liquids (all pur-	·
pose cleaners, sanitary	
products, floor cleaners,	
glass cleaners, carpet	
cleaners, metal cleaners).	
	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):	2,0
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/y	/ear):	2,0E+02
Maximum daily site tonnage (	kg/day):	2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor	or:	10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from pr	ocess (initial release prior to RMM):	1,0E-02
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
Conditions and Measures related to municipal sewage treatment plant		
Risk from environmental expo	sure is driven by freshwater.	

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Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following	1,4
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 disposal

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

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

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

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

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

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Cootion 4.4 Hoolth	

Section 4.1 - Health

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

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

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

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

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**Exposure Scenario - Consumer** 

30000001105	
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
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 MEASURES	O RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100	) %
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	mount up to (g):	6.390
covers skin contact area (cm	2):	468
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): 8		8
Other Operational Conditions affecting Exposure		
I I a I a conservation I and I are the conservation in the conserv		

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	Covere contentitutions up to 30 70
glue, wood parquet glue).	
giae, weed parduct giae).	covers use up to 1 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	Covers concentrations up to 50 70
пош эргау.	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
Adhasiyaa saalanta Caal	Covers concentrations up to 30 %
Adhesives, sealants Sealants.	Covers concentrations up to 50 %
ants.	covers use up to 365 day/year
	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
1.1.2	Avoid using when windows closed.
Lubricants, greases, re- lease products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
- 1	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.	22.2.2 23.132.11.3.13.13 ap 10 30 /0
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
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	2000 25 and 25 a
	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

Section 2.2	<b>Control of Environmental Exposure</b>	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	2,0
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	1,0E-03
Maximum daily site tonnage (	kg/day):	2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
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 p		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)	1,4
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 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** 

30000001106	
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 (%): 50 %	
Amounts Used		
Unless stated otherwise.		
covers skin contact area (cm2):		857,5
Frequency and Duration of	of Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		4
Other Operational Conditi	one 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
	For each use event, assumes swallowed amount of 0,3 g
	Covers exposure up to 4 hours/event
Plant protection products	Covers concentrations up to 15 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2

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For each use event, assumes swallowed amount of 0,3 g
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 (tonnes/year):		2,5E+01
Fraction of Regional tonnage used locally:		2,0E-03
Annual site tonnage (tonnes/)		5,0E-02
Maximum daily site tonnage (	kg/day):	1,4E-01
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	
	rocess (initial release prior to RMM):	0,9
Release fraction to wastewater from process (initial release prior to		1,0E-02
RMM):		
	process (initial release prior to RMM):	9,0E-02
	elated to municipal sewage treatment រុ	plant
Risk from environmental expo		
Estimated substance removal from wastewater via domestic sewage		94,6
treatment (%)	(10.6)	
Maximum allowable site tonnage (MSafe) based on release following		67
total wastewater treatment removal (kg/d)		0.05.00
Assumed domestic sewage treatment plant flow (m3/d) 2,0E+ Conditions and Measures related to external treatment of waste for dispose		2,0E+03
		-
al regulations.	sal of waste should comply with applicable	e local and/or region-

#### 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
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#### **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** 

30000001107	
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	
<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):		37.500
covers skin contact area (cm2):		420
Frequency and Duration of	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		0,143
Exposure (hours/event):		2
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
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 %
	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 420,00 cm2
	For each use event, covers amount up to 750 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid: Home space heater fuel.	Covers concentrations up to 100 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.000 g
	Covers use under typical household ventilation.
	Covers use in room size of 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 3/10-04/04/04/04/04/04/04/04/04/04/04/04/04/0

Section 2.2	<b>Control of Environmental Exposure</b>	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		1,7E+02
Fraction of Regional tonnage	used locally:	5,0E-04

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Annual site tonnage (tonnes/year):	8,6E-02
Maximum daily site tonnage (kg/day):	2,3E-01
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	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	1,2E+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	nent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	generated.

SECTION 3	EXPOSURE ESTIMATION

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

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

Section 3.1 - Health

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)FL 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

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measures.

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

(http://cefic.org).

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**Exposure Scenario - Consumer** 

30000001108	
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 A MEASURES	ND RISK MANAGEMENT
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 (%): 1	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
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 (tonne	s/year):	1,0E+03
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	5,0E-04
Maximum daily site tonnage	(kg/day):	1,4E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not i	influenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditio	ns 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):		2,5E-02
Release fraction to soil from process (initial release prior to RMM):		2,5E-02
Conditions and Measures r	elated to municipal sewage treatment p	lant
Risk from environmental expo	osure 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)		6,8E-01
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03
Conditions and Measures r	elated to external treatment of waste fo	r disposal
Frate and all the actions and a small all and a		

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	•

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

#### ShellSol A150 ND

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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.