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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)

NPIC: 018092166 (office hours only)

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	91-20-3, 202-049-5	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

In case of eye contact

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.

: 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 stor-

age stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

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

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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

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
Hydrocarbons, C10, aromatics, <1% naphthalene	Consumers	Oral	Long-term systemic effects	7,5 mg/kg bw/day

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Hydrocarbons, C10, aromatics, <1% naph-thalene	Consumers	Inhalation	Long-term systemic effects	32 mg/m3
Hydrocarbons, C10, aromatics, <1% naphthalene	Consumers	Dermal	Long-term systemic effects	7,5 mg/kg bw/day

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

Substance name		Environmental Compartment	Value
Hydrocarbons, C10, arc	matics,		
<1% naphthalene			
Remarks:	Substance	e is a hydrocarbon with a complex, unknown or	variable composi-
	tion. Conventional methods of deriving PNECs are not appropriate and it is		ppropriate and it is
	not possible 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 PPE suppliers.

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

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protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

Remarks

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: butyl-rubber Nitrile rubber gloves.

Incidental contact/Splash protection: Nitrile rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed 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 concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined

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space) use appropriate positive pressure breathing appa-

ratus.

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

priate combination of mask and filter.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : aromatic

Odour Threshold : Data not available

Melting point/freezing point : Data not available

Boiling point/boiling range : 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

pH : Data not available

Viscosity

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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 methods in compliance with applicable regulations.

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 national requirements and must be complied with.

MARROL - and lateractional Commention for the

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

REACH - List of substances subject to authorisation (Annex XIV)

Product is not subject to Authorisation 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.

ENVIRONMENTAL HAZARDS

Other regulations:

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

E2

The Safety, Health and Welfare at Work Acts 2005 & 2010. Chemicals Act 2008 & 2010. Carriage of Dangerous Goods by Road Regulations 2010.

Product is subject to the Control of Major Accident Hazards involving Dangerous Substances Regulations 2015 (S.I. No. 209 of 2015) based on Seveso III directive (2012/18/EU).

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

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

DSL : Listed

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IECSC : Listed

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.

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

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).

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.

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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	TION 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 1	00% (unless stated		
stance in Mixture/Article	differently).,			
Frequency and Duration of		1		
	o 8 hours (unless stated differently).			
Other Operational Condition		t-t- L PM (L)		
	an 20°C above ambient temperature (unles			
Assumes a good basic stand	ard of occupational hygiene is implemented	u.		
Contributing Scenarios	Risk Management Measures			
Drum/batch transfersDedi-	No other specific measures identified.			
cated facilityPROC8b	The earler openine measures restrained.	TWO Other Specific measures identified.		
General exposures (closed	No other specific measures identified.			
systems)PROC3				
General exposures (open	No other specific measures identified.			
systems)PROC4				
Pouring from small containersPROC13	No other specific measures identified.			
Equipment maintenance-	No other specific measures identified.			
PROC8a				
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/year): 1,0E+02				
Fraction of Regional tonnage used locally: 1,5E-02				
Annual site tonnage (tonnes/	Annual site 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				
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 the required removal efficiency of >= (%)	64,3			
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)	26			
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 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 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 Sub-	Covers use of substance/product up to 10	00% (unless stated
stance in Mixture/Article	differently).,	
Frequency and Duration of	Use	
	8 hours (unless stated differently).	
Other Operational Conditio		
Assumes use at not more that	n 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 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	

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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 STF)
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 1 differently).,	00% (unless stated
Frequency and Duration of		
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio		1
	in 20°C above ambient temperature (unles	s stated differently).
Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Laboratory activi- tiesPROC15	No other specific measures identified.	
CleaningPROC10	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Amounts Used		•
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	1,0E-01
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/		5,0E-05
Maximum daily site tonnage (1,4E-04
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year): 365		365
	nfluenced by risk management	
Local freshwater dilution factor		10
Local marine water dilution fa		100
Other Operational Conditio	ns affecting Environmental Exposure	

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Release fraction to air from process (initial release prior to RMM):	0,5
Release fraction to wastewater from process (initial release prior to RMM):	0,5
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges air emis-
sions and releases to soil	arges, air cinis-
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	
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 occitatio - W	01101
30000000724	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3
•	Process Categories: PROC 10, PROC 15
	Environmental Release Categories: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.
	material transfers and equipment distaining.

SECTION 2	OPERATIONAL CONDITIONS AND F	RISK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to differently).,	100% (unless stated
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		
	an 20°C above ambient temperature (unlard of occupational hygiene is implemen	
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	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 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
Environmental factors not	influenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Condition	ons affecting Environmental Exposure	
	process (initial release prior to RMM):	2,5E-02

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Release fraction to wastewater from process (initial release prior to	2,0E-02	
RMM):	4.05.04	
Release fraction to soil from process (initial release prior to RMM):	1,0E-04	
Technical conditions and measures at process level (source) to pro-	event release	
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit dischasions and releases to soil	arges, air emis-	
Risk from environmental exposure is driven by freshwater sediment.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide	0	
the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,3E+03	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for	r disposal	
External treatment and disposal of waste should comply with applicable	local and/or regional	
regulations.	Ç	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional		
regulations.	ŭ	
-		

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

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 - 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 MANAGEMEN MEASURES	Т
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 state differently).,	d
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.		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Ris	k Management Measures	
Drum/batch transfersPROC8a	l	No other specific measures identified.	
Transfer from/pouring from co tainersPROC9	n-	No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.PROC9	ent	No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PRO	СЗ	No other specific measures identified.	
Operation of equipment containing engine oils and similar.(closed systems)PROC20		No other specific measures identified.	
Operation of equipment conta ing engine oils and similar. Operation is carried out at elevated temperature (> 20°C above ambient temperature). PROC20		No other specific measures identified.	
Remanufacture of reject arti-		No other specific measures identified.	

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ClesPROC9 Requipment maintenance-PROC8a Storage.PROC1PROC2 Store substance within a closed system.				
Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EQUIDANCE Fraction of Regional tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 1 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 influenced by risk management 10 Local marine water dilution factor: 10 Local marine water dilution factor: 10 Under 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): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release	clesPROC9			
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): 1 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 influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to wastewater 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 regional conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Rechnical conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Risk from environmental exposure is driven by freshwater. Ro wastewater treatment required. Risk from environmental exposure is driven by freshwater. Ro wastewater treatment required. Ro retained exposure is driven by freshwater. Ro wastewater treatment required exposure is driven by freshwater. Ro drivental sludge to natural soils.			No other specific measures identified	d.
Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 1 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 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 influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Cother Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 5,0E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 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 Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%) 0 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 plant (%) Total efficiency of removal from wastewater via domestic sewage treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant (low (M3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal	Storage.PROC1PROC2		Store substance within a closed syst	em.
Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 1, 5,0E-04 Annual site tonnage (tonnes/year): 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): 100 Continuous release. Emission Days (days/year): 101 Local marine water dilution factor: 102 Cotal marine water dilution factor: 103 Cotal marine water dilution factor: 104 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): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 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. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) 1 Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) 1 If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Conditions and Measures related to municipal sewage treatment plant 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 reatment 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) 2,0E+03 Conditions and Measures related to external treatment of waste	Section 2.2	Со	ntrol of Environmental Exposure	
Predominantly hydrophobic. Amounts Used	Substance is complex UVCB.		•	
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Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): 5,0E-04 Maximum daily site tonnage (kg/day): 7,0E-04 Maximum daily site tonnage (kg/day): 7,4E-03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 8,65 Environmental factors not influenced by risk management Local freshwater dilution factor: 100 Cher Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 8,60E-02 Release fraction to soil from process (initial release prior to RMM): 7,5E-02 Release fraction to soil from process (initial release prior to RMM): 8,2,5E-02 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. 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 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	<u> </u>		<u> </u>	1
Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): 1,4E-03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 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): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 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. 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 >= (%) 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 plant (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release followi				5,0E-04
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Local freshwater 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): 2,5E-02 RMM): 2,5E-02 RMM): 2,5E-02 RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 RMM): 2,5E-02 RMM): 2,5E-02 RMM): 2,5E-02 RMM): 2,5E-02 RE-OSA		influ	enced by risk management	
Docal marine water dilution factor: Other Operational Conditions affecting Environmental Exposure				10
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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	Total efficiency of removal fro			94,6
Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal	Maximum allowable site tonnage (MSafe) based on release following 6,8E-01		6,8E-01	
Conditions and Measures related to external treatment of waste for disposal				2 0F±03
EXIGUAL RESUREDE ADD DICEOLOGII DE MAGETE CONTIN MUNDO MINTO ADDITIONAL INCOLOMAÇÃO PAGIONAL				

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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
3201013	LAI OSONE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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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	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	
	8 hours (unless stated differently).
Other Operational Condition	
	n 20°C above ambient temperature (unless stated differently).
Assumes a good basic standa	ard of occupational hygiene is implemented.
Contributing Scenarios	Risk Management Measures
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.
Drum/batch 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 Evacuus	
Section 2.2	Control of Environmental Exposure	-
Substance is complex UVCB	·	
Predominantly hydrophobic.		
Amounts Used		T .
Fraction of EU tonnage used		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	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not	influenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution fa	actor:	100
Other Operational Conditio	ns affecting Environmental Exposure	
Release fraction to air from p	rocess (initial release prior to RMM):	5,0E-03
	er from process (initial release prior to	3,0E-05
RMM):		,
Release fraction to soil from	process (initial release prior to RMM):	1,0E-03
	neasures at process level (source) to pr	
	ss sites thus conservative process re-	
lease estimates used.		
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		J 11, 11
Risk from environmental expe	osure is driven by freshwater.	
	olved 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 efficiency		
	wage treatment plant, no secondary	0
wastewater treatment require		
	p prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated		
oldage should be illeliterated	i, contained of recialified.	
Conditions and Measures r	elated to municipal sewage treatment p	lant
	If from wastewater via domestic sewage	94,6
treatment (%)	inom wastewater via domestic sewage	J-7,0
	om wastewater after onsite and offsite	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)		J-7,0
1 7	age (MSafe) based on release following	2,4E+04
total wastewater treatment re		Z,4LTU4
Assumed domestic sewage t		2,0E+03
	elated to external treatment of waste for	
Cytornal tractor and and allere		
External treatment and dispo regulations.	sal of waste should comply with applicable	local and/or regiona

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Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker		
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	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Condition	ns affecting Exposure
Assumes use at not more than 20°C above ambient temperature (unless stated differently). 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 transfersDedicate 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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Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: 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):	5,0E-04 1,2E-01 3,3E-01 365 10 100 1,0E-04 1,0E-05 ent release
Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit discharge.	3,3E-01 365 10 100 1,0E-04 1,0E-05 1,0E-05
Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit dischargements.	365 10 100 1,0E-04 1,0E-05
Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit discharge.	10 100 1,0E-04 1,0E-05
Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prevent to the process of the process release estimates used. Technical onsite conditions and measures to reduce or limit dischargement.	10 100 1,0E-04 1,0E-05
Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit discharge.	10 100 1,0E-04 1,0E-05
Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit dischargements.	1,0E-04 1,0E-05 1,0E-05
Cother Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to previous estimates used. Technical onsite conditions and measures to reduce or limit dischargements.	1,0E-04 1,0E-05 1,0E-05
Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharge.	1,0E-04 1,0E-05 1,0E-05
Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit dischargement of the process release estimates used.	1,0E-05 1,0E-05
Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharge.	1,0E-05 1,0E-05
RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit discharge.	1,0E-05
Technical conditions and measures at process level (source) to prev Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit discharge	
Common practices vary across sites thus conservative process re- ease estimates used. Technical onsite conditions and measures to reduce or limit discharge	ent release
ease estimates used. Technical onsite conditions and measures to reduce or limit discharge	
·	
Sions and releases to son	ges, air emis-
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%))
Treat onsite wastewater (prior to receiving water discharge) to provide ()
the required removal efficiency of >= (%)	
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 plai	nt
	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)	1,6E+02
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	2,0E+03
Conditions and Measures related to external treatment of waste for d	lisposal
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessmen	•
Conditions and measures related to external recovery of waste This substance is consumed during use and no waste of substance is ger	и.

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

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Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker	
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 RISK MANAGEME MEASURES	:NT
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 sta differently).,	ted
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(clo tems)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.	Substance is complex UVCB.		
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used in region: 0,1		0,1	
Regional use tonnage (tonnes/year): 1,6E+02		1,6E+02	
Fraction of Regional tonnage used locally:		1	

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Annual site tonnage (tonnes/year):	1,6E+02
Maximum daily site tonnage (kg/day):	7,8E+03
Frequency and Duration of Use	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Continuous release.	
Emission Days (days/year):	100
Environmental factors not influenced by risk management	1 : 5 5
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-
sions and releases to soil	_
Risk from environmental exposure is driven by freshwater sediment.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	95
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,7E+06
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	· · · · · · · · · · · · · · · · · · ·
Combustion emissions limited by required exhaust emission controls.	-
Waste combustion emissions considered in regional exposure assessm	
Conditions and measures related to external recovery of waste	

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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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.	

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Predominantly hydrophobic.	
Amounts Used	
	T o 4
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):	
Release fraction to soil from process (initial release prior to RMM):	9,0E-02
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	•
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
· · · · · · · · · · · · · · · · · ·	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	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)	.,
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 regional
regulations.	

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SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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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30000000706	1	
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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Carry out in a vented booth or extracted enclosure. Or:	O Marria IDDOO44	O C	
Wear a respirator conforming to EN140 with Type A filter obetter. ManualRolling, BrushingPROC10	SprayingManualPROC11	·	cted enclosure.
better.			I 40 with Tune A filter or
ManualRolling, BrushingPROC10 Storage.PROC1PROC2 Store substance within a closed system. Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (syear): Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: 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 traction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fract		,	140 with Type A litter or
Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 100 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-02 Maximum daily site tonnage (kg/day): 0,14 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Cother Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 0,95 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 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. 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 dremoval 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 after onsite and offsite (domestic treatment plant) RMMs (%)		Detter.	
Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 100 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-02 Maximum daily site tonnage (kg/day): 0,14 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Cother Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 0,95 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 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. 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 dremoval 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 after onsite and offsite (domestic treatment plant) RMMs (%)	ManualRolling, Brush-	No other specific measures identified	<u>.</u>
Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 100 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-02 Maximum daily site tonnage (kg/day): 0,14 Frequency and Duration of Use Continuous release. 10 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): 0,95 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 RMM): 2,5E-02 Rechnical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Rechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. 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 raise and offsite (domestic reatment plant) RMMs (%)		The earler openine measures recrimines	. .
Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 100 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-02 Maximum daily site tonnage (kg/day): 7,0E-02 Maximum daily site tonnage (kg/day): 7,0E-02 Maximum daily site tonnage (kg/day): 8,0E-02 Continuous release. Emission Days (days/year): 100 Continuous release. 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): 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): 2,5E-02 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. 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 (%)		Store substance within a closed syst	em.
Substance is complex UVCB.		, in the second	
Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Annual site tonnage (tonnes/year): Annual site tonnage (tonnes/year): Annual site tonnage (tonnes/year): Annual site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to 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. 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 (%)	Section 2.2	Control of Environmental Exposure	
Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Fraction of Regional tonnage used locally: Fraction of Regional tonnage used locally: Fraction of Regional tonnage (tonnes/year): Fraction of Regional tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Goal freshwater dilution factor: Local freshwater dilution factor: Local marine water dilution factor: Local marine water dilution factor: Into Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 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. 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 (%)	Substance is complex UVCB.		
Fraction of EU tonnage used in region:	Predominantly hydrophobic.		
Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-02 Maximum daily site tonnage (kg/day): 0,14 Frequency and Duration of Use Continuous release. Emission Days (days/year): 5,0E-02 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 10 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 0,95 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 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. 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 (%)	Amounts Used		
Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-02 Maximum daily site tonnage (kg/day): 0,14 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 Environmental factors not 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): 0,95 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to 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. 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 via domestic sewage treatment plant) RMMs (%)	Fraction of EU tonnage used	in region:	0,1
Annual site tonnage (tonnes/year): Maximum dally site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: 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): 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): 2,5E-02 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. 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 plant) RMMs (%)	Regional use tonnage (tonnes	s/year):	100
Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Semission Days (days/year): Local freshwater dilution factor: Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 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. 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 plant (%)	Fraction of Regional tonnage	used locally:	
Continuous release Emission Days (days/year): 365			5,0E-02
Continuous release. Emission Days (days/year): 365 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): 0,95 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to 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. 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 >= (%) 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 plant Estimated substance removal from wastewater via domestic sewage 194,6 treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)			0,14
Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 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): Z,5E-02 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. 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 plant Estimated substance removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	Frequency and Duration of	Use	
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): 0,95 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to 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. 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 >= (%) 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 (%)	Continuous release.		
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RMM): Release fraction to soil from process (initial release prior to RMM): Z,5E-02 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. 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 (%)			
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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 (%)			U
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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 (%)			
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treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	Conditions and Measures re	elated to municipal sewage treatment p	lant
treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)		· · · · · ·	
(domestic treatment plant) RMMs (%)	treatment (%)		
			94,6
Maximum allowable site tonnage (MSafe) based on release following 65			
	Maximum allowable site tonna	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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Exposure occurred	
3000000702	
EXPOSURE SCENARIO TITLE	
Use as binders and release agents- Industrial	
Sector of Use: SU3	
Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,	
PROC 6, PROC 7, PROC 8b, PROC 10, PROC 13, PROC 14	
Environmental Release Categories: ERC4, ESVOC SpERC	
4.10a.v1	
Covers the use as binders and release agents including ma-	
terial transfers, mixing, application (including spraying and	
brushing), and handling of waste.	
3//	

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

Contributing Scenarios	Risk Management Measures
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	ted enclosure.	
	, or:		
	Avoid carrying out activities involving	exposure for more that	
	4 hours		
ManualRolling, BrushingPROC7	No other specific measures identified	d.	
Dipping, immersion and pour-	No other specific measures identified	d.	
ingPROC13 Storage.PROC1PROC2	Store substance within a closed syst	om	
Storage. 1 NOOT1 NOO2	Store substance within a closed syst	em.	
	ntrol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used in re		0,1	
Regional use tonnage (tonnes/yea		9,6E+01	
Fraction of Regional tonnage use	d locally:	1	
Annual site tonnage (tonnes/year)		9,6E+01	
Maximum daily site tonnage (kg/d	lay):	4,8E+03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		20	
Environmental factors not influ	enced by risk management		
Local freshwater dilution factor:	10		
Local marine water dilution factor:	100		
	ffecting Environmental Exposure		
Release fraction to air from proce		1,0	
Release fraction to wastewater from process (initial release prior to 3,0E-06			
RMM):			
Release fraction to soil from process (initial release prior to RMM):			
	ures at process level (source) to pre	event release	
Common practices vary across si	tes thus conservative process re-		
lease estimates used. Technical onsite conditions and	d measures to reduce or limit disch	arges air emis-	
sions and releases to soil		argoo, an onno	
Risk from environmental exposure			
Prevent discharge of undissolved	substance to or recover from onsite		
wastewater.			
No wastewater treatment required			
Treat air emission to provide a typ		80	
·•	receiving water discharge) to provide	0	
the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, no secondary 0			
wastewater treatment required.			
Organisational measures to pre			
Do not apply industrial sludge to r			
Sludge should be incinerated, cor	ntained or reclaimed.		
Conditions and Measures relate	ed 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 disposal		

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management 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 ocemano - worke	•
30000000701	
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 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.

General exposures (closed systems)PROC1PROC2PROC3 Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment No other specific measures identified.	Contributing	g Scenarios	Ris	sk Management Measures
Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment No other specific measures identified.	General expo	osures (closed		No other specific measures identified.
Filling/ preparation of equipment No other specific measures identified.	systems)PR0	C1PROC2PRC	C3	
	Bulk transfer	sPROC8b		No other specific measures identified.
			ent	No other specific measures identified.
from drums or contain-	from drums of	or contain-		
ers.Dedicated facili-	ers.Dedicate	d facili-		
tyPROC8bPROC9				
Filling/ preparation of equipment No other specific measures identified.				No other specific measures identified.
from drums or containers.Non-	from drums of	or containers.No	า-	
dedicated facili-	dedicated fac	cili-		
tyPROC8aPROC5	tyPROC8aPI	ROC5		
Process samplingPROC8b No other specific measures identified.	Process sam	plingPROC8b		No other specific measures identified.
Metal machining opera- Provide a good standard of general or controlled ventilation (5	Metal machir	ning opera-		
tionsPROC17 to 15 air changes per hour).	tionsPROC1	7		to 15 air changes per hour).

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Manual Palling Prush	No other energific measures identifie	d	
ManualRolling, Brush-ingPROC10	No other specific measures identified	No other specific measures identified.	
SprayingPROC11	Minimise exposure by partial enclose	ure of the operation or	
Spraying: 113011	equipment and provide extract ventil		
	, or:		
	Wear a respirator conforming to EN	140 with Type A/P2 filte	
	or better.		
Treatment by dipping and pour	rr- No other specific measures identified	d.	
ingPROC13	No of consequences in a CC	1	
Equipment cleaning and	No other specific measures identified	a.	
maintenanceNon-dedicated facilityPROC8a			
Equipment cleaning and	No other specific measures identified		
maintenanceDedicated facili-	No other specific measures identified	u.	
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 region:	0,1	
Regional use tonnage (tonnes		5	
Fraction of Regional tonnage		5,0E-04	
Annual site tonnage (tonnes/y		2,5E-03	
Maximum daily site tonnage (kg/day):	6,8E-03	
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		
	ocess (initial release prior to RMM):	0,15	
	er from process (initial release prior to	5,0E-02	
RMM):		F 0F 00	
Release fraction to soil from process (initial release prior to RMM): 5,0E-02 Technical conditions and measures at process level (source) to prevent release			
		event release	
lease estimates used.	s sites thus conservative process re-		
	and measures to reduce or limit disch	arges air emis-	
sions and releases to soil	and modernes to reduce or mint discin	angoo, an onno	
Risk from environmental expo	sure is driven by freshwater.		
No wastewater treatment requ			
•	a typical removal efficiency of (%)	0	
·	to receiving water discharge) to provide	0	
the required removal efficience			
If discharging to domestic sev	vage treatment plant, no secondary	0	
wastewater treatment require	d.		

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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	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	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 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

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 Control of Worker Exposure		
Section 2.1			
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 to	o 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure		
Assumes use at not more the	an 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.

, resumes a good basis stands		or occupational rijgione to impromotion	
Contributing Scenarios	Ris	sk Management Measures	
General exposures (closed systems)PROC1PROC2PRO	C3	No other specific measures identified.	
General exposures (open systems)PROC4	-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC8b	ent	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC5	ent	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC9	ent	No other specific measures identified.	

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Process samplingPROC8b	No other specific measures identified.	
Metal machining operationsPROC17	No other specific measures identified.	
Treatment by dipping and pour ingPROC13	- No other specific measures identified.	
SprayingPROC7	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
ManualRolling, Brush-ingPROC10	No other specific measures identified.	
Automated metal roll- ing/formingUse in contained systemsOperation is carried or at elevated temperature (> 20° above ambient tempera- ture).PROC2		
Semi-automated metal roll- ing/formingOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC17	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.	
Equipment cleaning and maintenancePROC8aPROC8b	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in		
Regional use tonnage (tonnes/	vear): 1,0E+01	

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		1,0E+01
Fraction of Regional tonnage	,	1
Annual site tonnage (tonnes/y		1,0E+01
Maximum daily site tonnage (5,0E+02
Frequency and Duration of		J,0L+02
Continuous release.	US C	
Emission Days (days/year):		20
	nfluenced by risk management	20
Local freshwater dilution factor		10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	100
	rocess (initial release prior to RMM):	2,0E-02
	er from process (initial release prior to	3,0E-05
Release fraction to soil from p	0	
	easures at process level (source) to p	prevent release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions sions and releases to soil	and measures to reduce or limit disc	harges, 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	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	2,0E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has 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	
Measures/Operational Cond Where other Risk Manageme	expected to exceed the DN(M)EL when the Risk Management itions outlined in Section 2 are implemented. ent Measures/Operational Conditions are adopted, then users 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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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 MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
Covers daily exposures up to	8 hours (unless stated differently).		
Other Operational Condition	ns affecting Exposure		
	an 20°C above ambient temperature (unless stated differently). and of occupational hygiene is implemented.		

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 sys tems)PROC4	-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a		No other specific measures identified.	
Operation and lubrication of henergy open equipmentIndoorPROC17PROC18	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 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):		2,0	
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 p	rocess (initial release prior to RMM):	0,15	
Release fraction to wastewate RMM):	er from process (initial release prior to	5,0E-02	
Release fraction to soil from p	process (initial release prior to RMM):	5,0E-02	

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	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 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 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 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.			

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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 coeffairo Worke	•		
30000000692			
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	Risk	Management Measures	
General exposures (closed sy	/S-	No other specific measures identified.	
tems)PROC1PROC2PROC3			
Operation of equipment conta engine oils and similar.PROC		No other specific measures identified.	
General exposures (open systems)PROC4	-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a		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 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	Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used	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:		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	
RMM):	er from process (initial release prior to	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.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

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

Section 3.2 - Environment

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

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

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Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000691	
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 RISI MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Ris	k Management Measures	
General exposures (closed systems)PROC1PROC2PROC	C3	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.Non-dedicated facilityPROC8a		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.	
Initial factory fill of equip- mentPROC9		No other specific measures identified.	
Operation and lubrication of high energy open equipmentPROC17PROC18		No other specific measures identified.	

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ManualRolling, Brush-	No other specific measures identified	ed.
ingPROC10 Treatment by dipping and pou	r- No other specific measures identifie	-d
ingPROC13	The strict openine measures identified	, u.
SprayingPROC7	Minimise exposure by partial enclos	
	equipment and provide extract vent	ilation at openings.
Maintenance (of larger plant	No other specific measures identifie	 ed.
items) and machine set up-		
PROC8b		
Maintenance (of larger plant	Provide a good standard of controll	ed ventilation (10 to 15 air
items) and machine set upOp-		
eration is carried out at elevate	ea	
temperature (> 20°C above ambient temperature).PROC8	6	
Maintenance of small	No other specific measures identifie	-y
itemsPROC8a	. 10 care openio medeares identino	, u.
Remanufacture of reject arti-	No other specific measures identifie	ed.
clesPROC9		
Storage.PROC1PROC2	Store substance within a closed sys	stem.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used i	n region:	0,1
Regional use tonnage (tonnes		5,6E+01
Fraction of Regional tonnage	used locally:	1
Annual site tonnage (tonnes/y	ear):	5,6E+01
Maximum daily site tonnage (I		2,8E+03
Frequency and Duration of	Jse	
Continuous release.		
Emission Days (days/year):		20
	nfluenced by risk management	
Local freshwater dilution facto		10
Local marine water dilution fac		100
-	s affecting Environmental Exposure	5 0E 02
	ocess (initial release prior to RMM): r from process (initial release prior to	5,0E-03 3,0E-05
RMM):	i from process (initial release prior to	3,02-03
,	rocess (initial release prior to RMM):	1,0E-03
	easures at process level (source) to p	
	s sites thus conservative process re-	
lease estimates used.	•	
Technical onsite conditions	and measures to reduce or limit discl	harges, air emis-
sions and releases to soil		
	sure is driven by freshwater sediment.	
	ved substance to or recover from onsite	
wastewater.	*I	
No wastewater treatment requ		70
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	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.	9 * **	

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 Diek Management Magaures/Operational Conditions are adopted then users		

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

300000000690	
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 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		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b	No other specific measures identified.	
Drilling mud (re-)formulationPROC3	No other specific measures identified.	
Drill floor operationsPROC4	No other specific measures identified.	
Operation of solids filtering equipment - vapour exposuresPROC4	No other specific measures identified.	
Cleaning of solids filtering equipmentPROC8a	No other specific measures identified.	
Treatment and disposal of filtered solidsPROC3	No other specific measures identified.	

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Process samplingPROC3	No other specific measures identified.
General exposures (closed systems)PROC1	No other specific measures identified.
Pouring from small containersPROC8a	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.
Section 2.2	Control of Environmental Exposure
No exposure assessment pre	sented for the environment.

SECTION 3	EX	(POSURE	E ESTIMA	TION		
Section 3.1 - Health						
TI E05T00 TD4						 · .

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

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

Contributing Scenarios	Risk Management Measures	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b	· ·	
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a	ent No other specific measures identified.	
Automated process with (sem closed systems.Use in contair systemsPROC2	,	
Automated process with (sem closed systems.Drum/batch tr fersUse in contained systemsPROC3		
Semi Automated process. (e.g Semi automatic application of 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/)	/ear):	3,0E-04	
Maximum daily site tonnage (kg/day):	8,2E-04	
Frequency and Duration of			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i			
Local freshwater dilution factor	or:	10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from pr	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	
Technical conditions and measures at process level (source) to prevent release			
	ss sites thus conservative process re-		
lease estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air emis-			

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sions and releases to soil		
Risk from environmental exposure is driven by freshwater.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	4,1E-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 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	
OLOTION	EXI GOOKE EGTIMATION	
Section 3.1 - Health		
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The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 - Environment

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.

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

30000000688	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13 Environmental Release Categories: ERC4, ESVOC SpERC 4.4a.v1
Scope of process	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

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

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	ied.
Cleaning with high pressure washersPROC7	Limit the substance content in the Avoid carrying out operation for mo	
	, or: Wear a respirator conforming to El better.	N140 with Type A filter or
ManualSurfacesCleaningPROC10	No other specific measures identifi	ied.
Storage.PROC1	Store substance within a closed sy	stem.
Section 2.2 Cont	rol of Environmental Exposure	
Substance is complex UVCB.	,	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in regi	on:	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	/):	5,0E+03
Frequency and Duration of Use		1
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influer	nced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions afford	ecting Environmental Exposure	
Release fraction to air from process		1,0
Release fraction to wastewater from RMM):		3,0E-06
Release fraction to soil from proces		0
	es at process level (source) to pr	event release
Common practices vary across sites lease estimates used.	s thus conservative process re-	
	measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental exposure i	s driven by freshwater.	
Prevent discharge of undissolved so		
wastewater.		
No wastewater treatment required.		
Treat air emission to provide a typic		70
Treat onsite wastewater (prior to ret the required removal efficiency of >		0
If discharging to domestic sewage t wastewater treatment required.	reatment plant, no secondary	0
Organisational measures to prev	ent/limit release from site	
Do not apply industrial sludge to na		
Sludge should be incinerated, conta		

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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		
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	No other specific measures identified.
Preparation of material for approactionUse in contained batch processesPROC3	No other specific measures identified.
Film formation - air dryingPRC	No other specific measures identified.
Preparation of material for app cationPROC5	No other specific measures identified.

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Material transfersDrum/batch transfersNon-dedicated facilityPROC8aPROC8b	No other specific measures identified.	
Roller, spreader, flow applicationPROC10	No other specific measures identified.	
ManualSprayingIndoorPROC11	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Limit the substance content in the mixture to 50 %. , or: Wear a respirator conforming to EN140 with Type A filter or better.	
ManualSprayingOutdoorPROC11	Ensure operation is undertaken outdoors. Limit the substance content in the mixture to 50 %. Avoid carrying out 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 pouringPROC13	No other specific measures identified.	
Laboratory activitiesPROC15	No other specific measures identified.	
Hand application - fingerpaints, pastels, adhesivesIndoorPROC19	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	
Hand application - fingerpaints, pastels, adhesivesOut-doorPROC19	, adhesivesOut-	
Storage.PROC1	Store substance within a closed system.	
Section 2.2 Cor	trol of Environmental Exposure	
Substance is complex UVCB.		

Section 2.2 Control of Environmental Exposure		e	
Substance is complex UVCB.			
Predominantly hydrophobic.	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/year):		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 factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from p	rocess (initial release prior to RMM):	0,98	

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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
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	
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	r disposal
External treatment and disposal of waste should comply with applicable regulations.	•
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	9 - 3

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		
	an 20°C above ambient temperature (unless stated differently).	
	ard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
General exposures (closed systems)PROC1	No other specific measures identified.	
General exposures (closed systems) with sample collectionUse in contained systemsPROC2	No other specific measures identified.	
Film formation - force dry- ing, stoving and other tech- nologies.(closed sys- tems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2	No other specific measures identified.	
Mixing operations (closed systems)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			
Fraction of EU tonnage used in region:		0,1	
Regional use tonnage (tonne		1,7E+03	
Fraction of Regional tonnage		1	
Annual site tonnage (tonnes/		1,7E+03	
·	Maximum daily site tonnage (kg/day): 1,7E+04		
Frequency and Duration of	Use		
Continuous release.		400	
Emission Days (days/year): 100 Environmental factors not influenced 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 International Control of the Contro	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

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

Section 3.2 - Environment

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

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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE	
	EXPOSURE SCENARIO	

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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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	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		
ManualTransfer from/pouring	No other specific measures identified	d.
from containersNon-dedicated		
facilityPROC8a		
Drum/batch transfersDedicated	No other specific measures identified	d.
facilityPROC8b		
Production or preparation or	No other specific measures identified	d.
articles by tabletting, compres-		
sion, extrusion or pelletisa-		
tionPROC14		
Drum and small package fill-	No other specific measures identified	d.
ingPROC9		
Equipment cleaning and	No other specific measures identified	d.
maintenancePROC8a		
Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2 Co	ontrol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in re	eaion:	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/d	day):	5,1E+03
Frequency and Duration of Use		1 0,1 = 100
Continuous release.		
Emission Days (days/year):		100
Environmental factors not influ	100	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	affecting Environmental Exposure	100
Release fraction to air from proce		1,0E-02
	om process (initial release prior to	2,0E-04
RMM):	om process (miliar release prior to	2,02 04
	ess (initial release prior to RMM):	1,0E-04
	sures at process level (source) to pro	L
	ites thus conservative process re-	CVCIILICICASC
lease estimates used.	itoo tiido oorioorvatiivo proocoo ig-	
	d measures to reduce or limit disch	arges, air emis-
sions and releases to soil	d measures to reduce or mint disch	arges, an emis-
	e is driven by freshwater sediment.	
	substance to or recover from onsite	
wastewater.	2 Substance to or receiver from offsite	
No wastewater treatment require		
Treat air emission to provide a ty		0
		0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)		"
If discharging to domestic sewag		0
wastewater treatment required.	o troutinont plant, no socondary	~
One of a Constant of the original of the origi	411 14 1 6 14	<u> </u>

Organisational measures to prevent/limit release from site

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Do not apply industrial sludge to natural soils.

Sludge should be incinerated, contained or reclaimed.

Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,3E+05	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	

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

Section 3.2 -Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker	
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 distribution and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 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	
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. 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		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		1
Fraction of Regional tonnage		2E-03
Annual site tonnage (tonnes/		2,0E-03
Maximum daily site tonnage		150
Frequency and Duration of		100
Continuous release.	030	
Emission Days (days/year):		20
	influenced by risk management	20
Local freshwater dilution fact		10
Local marine water dilution fact		100
	ns affecting Environmental Exposure	100
	rocess (initial release prior to RMM):	1,0E-03
	er from process (initial release prior to	1,0E-05
RMM):	. , , , , ,	,
	process (initial release prior to RMM):	1,0E-05
	neasures at process level (source) to pr	event release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-
	cours is drives by freebyeater	
	osure is driven by freshwater.	
No wastewater treatment req		00
	a typical removal efficiency of (%)	90
	or to receiving water discharge) to provide	0
the required removal efficient	wage treatment plant, no secondary	0
wastewater treatment require		0
	o prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated		
Sidage should be inclinerated	, contained of reciainled.	
Conditions and Measures r	elated to municipal sewage treatment p	lant
	If from wastewater via domestic sewage	94,6
treatment (%)		3 1,0
	om wastewater after onsite and offsite	94,6
(domestic treatment plant) R		,•
	age (MSafe) based on release following	5,0E+01
total wastewater treatment re		3,02.01
Assumed domestic sewage t		2,0E+03
	elated to external treatment of waste fo	
	sal of waste should comply with applicable	
Conditions and measures	related to external recovery of waste	
vviiviiviis allu liicasults l	CIGICA TO EXTERNAL LECTIVELY OF WASIE	

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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

Exposure deciratio - Worker	
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 marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	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)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	T
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	arges, an emis
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	60,0
the required removal efficiency of >= (%)	00,0
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
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	r 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	
00000001100	
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 A MEASURES	AND RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	•
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%):	100 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		13.800
covers skin contact area (cm2):		857,5
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Condition	ns affecting Exposure	
Unless stated otherwise.		
0	1	

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).	
giae, weed parquet giae).	covers use up to 1 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
Adhasiyas asalanta Clus	Covers exposure up to 6,00 hours/event
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 exposure up to 0,17 hours/event
Anti-Freeze and de-icing	Covers concentrations up to 50 %
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
Distribution Late (s. Dis	Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	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 %
<u> </u>	covers use up to 128 day/year
	Covers use up to 125 day/year
	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
Occident and the state of the	Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 1,5 %

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nore point removes M/s	T
ners, paint removers Wa-	
terborne latex wall paint.	covers use up to 4 day/year
	covers use up to 4 day/year Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 21,3 %
•	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Aerosol spray can.	
	covers use up to 2 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,33 hours/event
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 50 %
	covers use up to 3 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Fillers and putty.	Covers concentrations up to 2 %
	covers use up to 12 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Fillers, Putties Plasters and	Covers concentrations up to 2 %

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

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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	lant
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage	94,6
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	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	local and/or region-
al regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional

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

regulations.

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

30000001102		
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 Exposur	е
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kP	a at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%):	100 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	mount up to (g):	13.800
covers skin contact area (cm2):		857,5
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		4
Exposure (hours/event):		8
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.		
Covers use at ambient temp	eratures.	
Covers use in room size of 20m2		

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		
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 /0	
	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).	covers use up to 365 day/year	
	covers use up to 365 day/year Covers use up to 1 times/day of use	
	covers use up to 1 times/day of use covers skin contact area up to (cm2): 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	
Anti Franza and da ising	Covers exposure up to 8,00 hours/event Covers concentrations up to 1 %	
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	Covers concentrations up to 10 %	
products Pouring into radiator.	эр нэ нэ нэ	
	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
Anti-Freeze and de-icing	Covers exposure up to 0,17 hours/event Covers concentrations up to 50 %
products Lock de-icer.	·
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry	Covers concentrations up to 5 %
and dish washing products.	
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,50 hours/event
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners,	Covers concentrations up to 15 %
trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.

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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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	acycra usa un ta A day/yaar
	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
Environmental factors not influenced by risk management		
Local freshwater dilution fact	or:	10
Local marine water dilution factor:		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		2,5E-02
RMM):		
Release fraction to soil from process (initial release prior to RMM):		2,5E-02
	elated to municipal sewage treatment p	<u>plant</u>
	osure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage		94,6
treatment (%)		0.05.00
Maximum allowable site tonnage (MSafe) based on release following		6,8E-02
total wastewater treatment removal (kg/d)		2.05.02
Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal		
	sal of waste should comply with applicable	e local and/or region-
al 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 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

202020204402	
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 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	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6.390
covers skin contact area (cm2):		468
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (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
	1 Corollo add ap to 1 millionady of add

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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/)	/ear):	2,0E+02	
Maximum daily site tonnage (kg/day):	2,7E-03	
Frequency and Duration of	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		1,0E-02	
RMM):			
Release fraction to soil from process (initial release prior to RMM): 1,0E-02		1,0E-02	
Conditions and Measures related to municipal sewage treatment plant			
Risk from environmental exposure 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 total wastewater treatment removal (kg/d)	1,4
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Assumed domestic sewage treatment plant now (mo/d)	/

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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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 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
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 Condition	ns affecting Exposure	
I I a I a conservation I and I and I a conservation		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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	Covers exposure up to 4,00 hours/event		
Adhesives, sealants Glues	Covers concentrations up to 30 %		
DIY-use (carpet glue, tile	Covers concentrations up to 30 %		
glue, wood parquet glue).			
gias, iissa paidasi gias).	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 %		
nom spray.	covers use up to 6 day/year		
	covers use up to 6 day/year Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 35,73 cm2		
	For each use event, covers amount up to 85,05 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	Covers exposure up to 4,00 hours/event		
Adhesives, sealants Seal-	Covers concentrations up to 30 %		
ants.			
	covers use up to 365 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 35,73 cm2		
	For each use event, covers amount up to 75 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	Covers exposure up to 1,00 hours/event		
	Avoid using when windows closed.		
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %		
	covers use up to 4 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 468,00 cm2		
	For each use event, covers amount up to 2.200 g		
	Covers use in a one car garage (34 m3) under typical ventila-		
	tion.		
	Covers use in room size of 34 m3		
	Covers exposure up to 0,17 hours/event		
Lubricants, greases, re-	Covers concentrations up to 20 %		
lease products Pastes.	<u>'</u>		
	covers use up to 10 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 468,00 cm2		
	For each use event, covers amount up to 34 g		
	Covers exposure up to 4 hours/event		
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %		
	covers use up to 6 day/year		
	Covers use up to 1 times/day of use		

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covers skin contact area up to (cm2): 428,75 cm2	
For each use event, covers amount up to 73 g	
Covers use under typical household ventilation.	
Covers use in room size of 20 m3	
Covers exposure up to 0,17 hours/event	
Covers concentrations up to 50 %	
covers use up to 29 day/year	
Covers use up to 1 times/day of use	
covers skin contact area up to (cm2): 430,00 cm2	
For each use event, covers amount up to 142 g	
Covers use under typical household ventilation.	
Covers use in room size of 20 m3	
Covers exposure up to 1,23 hours/event	
Covers concentrations up to 50 %	
·	
covers use up to 8 day/year	
Covers use up to 1 times/day of use	
covers skin contact area up to (cm2): 430,00 cm2	
For each use event, covers amount up to 35 g	
Covers use under typical household ventilation.	
Covers use in room size of 20 m3	
Covers exposure up to 0,33 hours/event	

Section 2.2 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/)	/ear):	1,0E-03
Maximum daily site tonnage (kg/day):	2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
	rocess (initial release prior to RMM):	0,15
Release fraction to wastewater from process (initial release prior to RMM):		5,0E-02
Release fraction to soil from process (initial release prior to RMM):		5,0E-02
Conditions and Measures related to municipal sewage treatment plant		
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 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		
D 1' / 1	the state of the s	

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

where other Risk Management Measures/Operational Conditions are adopted, then 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 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): 4		4
Other Operational Condition	ons affecting Exposure	•

Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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	s/year):	2,5E+01	
Fraction of Regional tonnage	used locally:	2,0E-03	
Annual site tonnage (tonnes/)	/ear):	5,0E-02	
Maximum daily site tonnage (kg/day):	1,4E-01	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
	nfluenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
	Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):		0,9	
Release fraction to wastewater from process (initial release prior to		1,0E-02	
RMM):			
Release fraction to soil from process (initial release prior to RMM):		9,0E-02	
	elated to municipal sewage treatment p	olant	
Risk from environmental expo			
Estimated substance removal from wastewater via domestic sewage		94,6	
treatment (%)			
Maximum allowable site tonnage (MSafe) based on release following		67	
total wastewater treatment removal (kg/d)			
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03	
	elated to external treatment of waste for		
External treatment and disposal 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

300000001107	
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 MEASURES	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 amount up to (g):		37.500
covers skin contact area (cm2):		420
Frequency and Duration of 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 Conditions affecting Exposure		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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	covers use up to 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210 cm2
	For each use event, covers amount up to 3.750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid, Garden Equipment - Use.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
	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	Control of Environmental Exposure	9
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	lant
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage	94,6
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	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 assessm	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
0 4' 0 4 11 141	

Section 3.1 - Health

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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measures.

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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		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 influenced by risk management		
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditio	ns affecting Environmental Exposure	
	rocess (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
	elated to municipal sewage treatment p	
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		6,8E-01
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.	

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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.